DOCUMENT RESUME

ED 377 614 EC 303 541

AUTHOR	Easterbrooks, Susan, Ed.; Baker-Hawkins, Sharon, Ed.
TITLE	Deaf and Hard of Hearing Students: Educational Service Guidelines.
INSTITUTION	National Association of State Directors of Special Education, Alexandria, VA.; Northern Illinois Univ., DeKalb. Research and Training Center for Traditionally Underserved Persons Who Are Deaf.
SPONS AGENCY	National Inst. on Disability and Rehabilitation Research (ED/OSERS), Washington, DC.
PUB DATE	[94]
CONTRACT	H133B00014
NOTE	182p.
AVAILABLE FROM	Deaf Guidelines Document, c/o National Association of State Directors of Special Education, 1800 Diagonal Rd., Suite 320, Alexandria, VA 22314 ($10).
PUB TYPE	Guides - Non-Classroom Use (055)
EDRS PRICE	MF01/PC08 Plus Postage.
DESCRIPTORS	Certification; Cued Speech; Deaf Interpreting; Deafness; *Educational Practices; Elementary Secondary Education; Evaluation Methods; Guidelines; *Hearing Impairments; Models; Needs Assessment; Partial Hearing; Program Development; *Standards; Student Evaluation; Student Placement; Teacher Characteristics

ABSTRACT

This document provides assistance to education agencies and, through them, to educators, service providers, and parents of students who are deaf or hard of hearing. The guidelines are a collaborative effort of 10 national organizations. The document is organized into five chapters and a glossary. Chapter 1 describes the issues that are basic to understanding hearing loss, and as such, provides the foundation or background information needed by professionals in the field. Chapter 2 presents characteristics of supportive structures and administration. Chapter 3 describes the process of identifying and assessing individual needs. Chapter 4 reviews program options and methods of choosing appropriate placements. Chapter 5 describes characteristics of personnel who will work with children after placement. The glossary provides definitions for terminology used through the document. Nine appendices include: knowledge and skill statements for beginning teachers of students with hearing impairments; model standards for the certification of educational interpreters; information on cued speech transliteration; a position statement on identification of hearing impairment in infants; guidelines for service provision to infants and toddlers with hearing impairments; policy guidelines of the Office of Special Education and Rehabilitative Services; audiology guidelines; and a directory of national organizations of and for people with hearing impairments. Individual chapters contain references. (DB)

ED 377 614

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

NATIONAL ASSOCIATION
OF STATE DIRECTORS OF
SPECIAL EDUCATION

DEAF AND HARD OF HEARING STUDENTS

educational service guidelines

EC 303541

BEST COPY AVAILABLE

NATIONAL ASSOCIATION
OF STATE DIRECTORS OF
SPECIAL EDUCATION

DEAF AND HARD OF HEARING STUDENTS

educational service guidelines

> > > ▶

This document was supported in part by a subcontract with the Northern Illinois University Research and Training Center on Traditionally Underserved Persons Who are Deaf and funded by the National Institute on Disability and Rehabilitation Research, U.S. Department of Education (Grant No. H133B000014). However, the opinions expressed herein do not necessarily reflect the position or policy of the U.S. Department of Education, and no official endorsement by the Department should be inferred.

Table of Contents

Acknowledgements *vii*

Foreword *ix*

1 *Foundations for Educating Students Who Are Deaf or Hard of Hearing* *1*

ISSUE I Educators should be knowledgeable of the unique educational needs of students with hearing losses *2*

ISSUE II Educators should be aware of the findings of the President's Commission on Education of the Deaf *6*

ISSUE III Educators should be knowledgeable of the United States Department of Education Policy Guidance on deaf students' education services *6*

ISSUE IV Educators should be knowledgeable about the rights of students who are deaf and hard of hearing *7*

ISSUE V Educators should be knowledgeable about the specific cultural and linguistic needs of students who are deaf *8*

ISSUE VI Educators should be knowledgeable about the specific educational needs of students who are hard of hearing *9*

ISSUE VII Educators should be knowledgeable about population demographics and the educational implications of service to the increasing numbers of students who are deaf or hard of hearing and come from diverse ethnic, linguistic, and racial backgrounds *10*

ISSUE VIII Educators should be knowledgeable of specific educational needs of students with hearing loss and additional disabilities *11*

ISSUE IX Educators should be knowledgeable about the need for environmental access and access to technology *12*

2 *Supportive Structures and Administration* 16

ISSUE I Education agencies should establish and maintain a unit within their auspices to ensure that the provisions and policies related to students who are deaf or hard of hearing presented herein are implemented 17

ISSUE II Education agencies should ensure that all personnel have the knowledge necessary to fulfill their roles relative to students who are deaf or hard of hearing 17

ISSUE III Education agencies should ensure that the assessment of each student is ongoing and appropriate for educational decision making 20

ISSUE IV Education agencies should ensure that all appropriate program options and services are available to meet the unique needs of students who are deaf or hard of hearing 22

ISSUE V Education agencies should ensure that there are adequate resources and facilities and that these are appropriately managed 26

ISSUE VI Education agencies should ensure that there is a process in place to assess the effectiveness of the entire program 28

3 *Assessment* 32

ISSUE I Educators evaluating babies and young children who are deaf and hard of hearing must place parents in a central role in the process 33

ISSUE II Educators should assess carefully each student as an individual 34

ISSUE III Individuals involved in administering assessment tools to students who are deaf or hard of hearing need to be proficient in the student's communication mode, style, or language 36

ISSUE IV Educators should assess the special language abilities and preferences of each student who has a hearing loss 38

ISSUE V. Educators should consider the special academic and developmental levels and needs of students who are deaf or hard of hearing 39

ISSUE VI Administrators and educators should operationalize a system for monitoring students with hearing losses who are at risk for additional academic failure 42

ISSUE VII Administrators should ensure that individuals from multiple disciplines with specific expertise in the area of hearing loss are on the multidisciplinary team 43

4 *Placement and Program Options* 48

ISSUE I Educators should consider all of the factors unique to students who are deaf or hard of hearing to ensure that the placement of a student is appropriate and least restrictive 49

ISSUE II Educators should consider the student's and parents' preference and choice in all aspects of program options, placement, and IEP development 50

ISSUE III Educators should investigate the communication access available to each student in the home, classroom, and overall school environment 51

ISSUE IV Educators should consider the student's degree of hearing loss and the student's ability to use residual hearing 51

ISSUE V Educators should be aware of the availability of interpreters and the need to monitor quality of the services they provide 52

ISSUE VI Educators should understand the importance of social and emotional development of students who are deaf or hard of hearing 52

ISSUE VII Educators should ensure the availability of age appropriate peers who are deaf or hard of hearing 53

ISSUE VIII Educators should ensure that the cultural needs of student who are deaf or hard of hearing are met 53

ISSUE IX Educators should ensure that students who are deaf or hard of hearing receive appropriate opportunities for direct instruction and direct communication with support personnel 54

ISSUE X Educators should be aware of the qualifications and communication competencies that all personnel serving students who are deaf or hard of hearing need 54

ISSUE XI Educators should ensure appropriate access to support services for students who are deaf or hard of hearing 55

ISSUE XII Educators should ensure the availability of and access to extracurricular offerings for students who are deaf or hard of hearing 55

ISSUE XIII Educators should ensure the availability of technology for students who are deaf or hard of hearing 55

5 *Personnel* 58

ISSUE I Education personnel should have the specialized knowledge, skills, and attributes needed to serve students who are deaf and hard of hearing 59

ISSUE II Education personnel should be knowledgeable of how to work with families 60

ISSUE III Education personnel should work collaboratively with others to meet the diverse needs of students with hearing losses 61

ISSUE IV Education personnel should be aware of the need for and the challenges associated with providing ongoing appropriate assessment 72

ISSUE V. Education personnel should be proficient in the language and preferred communication mode of their students who are deaf or hard of hearing 73

ISSUE VI Education personnel should reflect the ethnic, cultural, and linguistic backgrounds or the students they serve 73

ISSUE VII Education professionals should be knowledgeable of ways to promote interactions between the school and families in the community 73

ISSUE VIII Education personnel should be aware of processes and procedures for reaching outside the boundaries of their buildings or systems when an appropriate education program is not available 74

ISSUE IX Education personnel should engage in ongoing professional development activities 74

Glossary 76

Appendices 85

Appendix A. CEC/CED Joint Knowledge and Skill Statements For All Beginning Teachers of Students Who Are Deaf or Hard of Hearing

Appendix B. Model Standards for the Certification of Educational Interpreters for Deaf Students and Suggested Options for Routes to Certification

Appendix C. Cued Speech Transliteration: The Evolution of a Profession

Appendix D. Joint Committee on Infant Hearing 1994 Position Statement

Appendix E. Service Provision to Children Who Are Deaf or Hard of Hearing: 0-36 Months

Appendix F. OSERS Policy Guidance: Appropriate Educational Services to Students Who Are Deaf

Appendix G. Guidelines for Audiology Services in the Schools

Appendix H. Guidelines for Fitting and Monitoring FM Systems

Appendix I. National Information Center on Deafness Directory of National Organizations of and for Deaf and Hard of Hearing People

Acknowledgments

The Deaf Education Initiative Project represents a unique opportunity for the National Association of State Directors of Special Education (NASDSE) to focus its advocacy efforts on a specific low incidence disability. However, the development of this guidelines document was really made possible through the concerted efforts of many individuals and the organizations who supported them. NASDSE expresses sincere thanks to the ten organizations which lent their collegial support to the guidelines project. While organizational participation does not imply total endorsement of everything in the document by each organization, it does signify strong support of the overall concepts embodied in the guidelines.

The members of the Steering Committee and their organizational affiliation are named below. Additionally, more than ten persons from around the country served on a task force with responsibility for content review and comment on guideline drafts. The Steering Committee gratefully acknowledges the generous efforts of the task force during two rounds of content review.

The National Association of State Directors of Special Education and the Steering Committee especially appreciate the support of Dr. Robert Davila, who during his tenure as Assistant Secretary of Education for the Office of Special Education and Rehabilitative Services, was instrumental in conceptualizing this project. Throughout the recent educational reform movement he has been a steadying force in helping educational agencies preserve the continuum of service options for all students who are deaf or hard of hearing.

Finally, the Project staff, Steering Committee, and editors wish to express special gratitude to the Departments of Education of the states of California and Massachusetts. Both States have previously developed guidelines documents for serving this population. These excellent publications, *Guidelines for the Education of Deaf and Hard of Hearing Students: Publication No. 15927-2000-70* from Massachusetts and *Program Guidelines for Hearing Impaired Individuals: Publication No. 0-8011-0309-92* from California, were quoted from extensively through this present document. Both Departments of Education graciously consented to allow the writers to use information from their documents and to cite them, for the sake of expediency, in somewhat less than formal fashion.

Steering Committee

The Steering Committee was comprised of representatives of the ten participating organizations. They assumed primary responsibility for developing the text of the guidelines document, reviewing and responding to countless comments from the larger Task Force, and making recommendations to one another as the process of developing the document unfolded. While all members of the Steering Committee contributed to all chapters, certain individuals were designated as having primary responsibility for initial drafts of individual chapters. Listed on the following page in alphabetical order, are the participating organizations and the individual Steering Committee representatives who served on behalf of the organizations.

Alexander Graham Bell Association of the Deaf, Inc. (AGBAD)
Dr. Donald McGee, Washington, DC

Association of College Educators- Deaf and Hard of Hearing (ACE-DHH)
Dr. Marilyn Sass-Lehrer, Washington, DC

American Society for Deaf Children (ASDC)
Ms. Sharon Baker-Hawkins, Oklahoma

American Speech-Language-Hearing Association (ASHA)
Ms. Evelyn Cherow, Maryland

Conference of Educational Administrators Serving the Deaf (CEASD)
Dr. Oscar Cohen, New York

Convention of American Instructors of the Deaf (CAID)
Dr. Michael Beinenstock, Maryland

Council for Exceptional Children (CEC)
Dr. Susan Easterbrooks, Alabama
Dr. Fred Weintraub, Virginia

Local Education Agencies (LEA)
Fairfax County Schools
Ms. Katharine Roed, Virginia

National Association of the Deaf (NAD)
Dr. Gertrude Galloway, New Jersey
Mr. Joseph Innes, Maryland

National Association of State Directors of Special Education (NASDSE)
Dr. Thomas Neveldine, New York
Dr. Carl Haltom, Delaware

National Cued Speech Association (NCSA)
Ms. Barbara Caldwell, North Carolina

NASDSE Project Staff

Dr. Gaylen S. Pugh, Director

Dr. Doin Hicks, Consultant

Ms. Kimberley Cummings-Reinoehl, Coordinator

Editors

Dr. Susan Easterbrooks

Ms. Sharon Baker-Hawkins

[Special thanks to Dr. Kathee Christensen, California and
Dr. Ann Powers, Alabama for assistance with particular sections]

Foreword

All education is special. All children are special. Are some more special than others? No, but because of exceptional abilities or special challenges, some require adjustments, additions, or changes to their programs. Those from low incidence disability populations and/or whose disabilities are more challenging may need extraordinary levels of specialized support.

The intention of this guidelines document for programs serving students with hearing losses is to provide assistance to education agencies and, through them, to educators, service providers, and parents. It describes in some detail needed program elements and features which must be considered when designing appropriate services for individual students who are deaf or hard of hearing. Comprehensiveness and quality are stressed over value judgments. A full range of options is considered.

The manner in which this document was conceived and developed is unique. It is a collaborative effort of representatives from ten national organizations which have a vested interest in the education of students who are deaf and hard of hearing as well as three others which serve the broader population of students with disabilities. A steering committee of representatives from these organizations assumed responsibility for research, chapter drafts, and revisions. An additional 72 member task force provided two rounds of review and comments on the draft. Fittingly, the National Association of State Directors of Special Education, a group which has state level policy responsibility for all programs for students with disabilities, coordinated the project.

This document is organized into five chapters and a Glossary. Each chapter begins with a listing of the issues which it will address. Chapter One presents the foundation for the remaining information. Chapter Two presents characteristics of a framework for services. Chapter Three describes the process of identifying and assessing individual needs. Chapter Four identifies concepts which must be addressed, after an appropriate assessment has been completed, in reviewing program options and choosing appropriate placements. Chapter Five describes characteristics of personnel who will work to meet the individual needs of children once an appropriate placement to meet these needs has been identified. The Glossary provides an in-depth look at some of the terminology used throughout the document. Each chapter is followed by a reference section applicable to that chapter. Because of the complex nature of the information presented herein, some issues overlap or are repeated in different contexts and across chapters.

The guidelines embodied in this document are designed to be modified and improved as "best practices" emerge from the document's application by state and local agencies, educators, other service providers, and parents. As such, this document can only be considered a "living document" if the community-wide collaboration which brought this document into being continues to grow.

1

Foundations for Educating Students Who Are Deaf or Hard of Hearing

This document is designed to help educators develop and manage appropriate educational programs for children who are hard of hearing or deaf. In order to implement appropriate programs, administrators must be familiar with the unique features of hearing loss and their effects on a child's language, academic, cognitive, and social-emotional development as well as the impact on the family.

This chapter describes the issues that are basic to understanding hearing loss and, as such, provides foundation or background information needed by administrators and other professionals in the field.

The following nine (9) issues are discussed:

ISSUE I. Educators should be knowledgeable of the unique educational needs of students with hearing losses.

ISSUE II Educators should be aware of the findings and concerns of the president's commission on education of the deaf.

ISSUE III Educators should be knowledgeable of the United States Department of Education policy guidance on deaf students' education services.

ISSUE IV. Educators should be knowledgeable about the rights of students who are deaf and hard of hearing.

ISSUE V Educators should be knowledgeable about the specific cultural and linguistic needs of students who are deaf.

ISSUE VI Educators should be knowledgeable about the specific educational needs of students who are hard of hearing.

ISSUE VII Educators should be knowledgeable about population demographics and the educational implications of service to the increasing numbers of students who are deaf or hard of hearing and come from diverse ethnic, linguistic, and racial backgrounds.

ISSUE VIII Educators should be knowledgeable of specific educational needs of students with hearing loss and additional disabilities.

ISSUE IX Educators should be knowledgeable about the need for environmental access and access to technology.

ISSUE I. Educators should be knowledgeable of the unique educational needs of students with hearing losses.

Children who are deaf and hard of hearing have unique cultural and linguistic needs that make them different from other groups of children, with or without disabilities. Most hearing children enter school with the ability to process and integrate verbal information. They have a basic command of the language and an extensive vocabulary. School systems establish programs and services and develop curricula based on the assumption that all children enter school with basic language skills. The schools then proceed to teach children to read, write, and develop computational skills. With these tools, children are ready for the acquisition of information in content areas. Education systems, in general, help students reach the goals of self-realization, development of proper human relationships, attainment of economic sufficiency, and assumption of civic responsibility. The goals for educating children with hearing loss are identical. However, children with hearing loss seldom bring to their educational experience the same extensive language background or the same breadth of language skills as do hearing children.

The unique communication and language needs of students who are deaf or hard of hearing pose a special challenge for developing appropriate educational programming and for determining the Least Restrictive Environment (LRE), described more fully in *Issue III*. Access to the most information, opportunities for the most incidental learning, and occasions for learning through peer interaction are important considerations. In all cases, the needs of the student should determine the characteristics of the program and the placement to ensure that the most appropriate education is received. A full array of services and continuum of placements must be considered as part of the Individualized Educational Program (IEP) process. For some students, a regular education setting with the necessary support services will provide the most appropriate program; for others, a school for the deaf may be best (Massachusetts Department of Education, 1989, p.19).

Goals 2000: Educate America Act (P.L. 103-227), the current federal school reform movement, while not providing highly specific reference to disabled populations, is expected to provide incentive and influence for support of the Individuals with Disabilities Education Act (IDEA), the Americans with Disabilities Act (ADA), and other public policy programs which have significant impact on this field. According to Harkin (1993), the Senate Committee on Labor and Human Resources expected that:

> *Goals 2000: Educate America Act* will serve as a vehicle for making the promise of Part B of IDEA a reality for all students with disabilities. Therefore, under this legislation, students with disabilities, including lesser known and newly emerging disabilities and students with significant and multiple disabilities, must be an integral part of all aspects of education reform, including the application of the National Education Goals and Objectives, the establishment of national and State content, performance and opportunity-to-learn standards, and the use of assessments and systems of assessments. (p.26)

In addition to the unique communication needs and interplay between current trends and federal policy initiatives, several other tenets form the foundation for implementing programs for students with hearing loss.

Early Identification and Assessment

Public Law 102-119 (formerly P.L. 99-457), the 1990 amendments to IDEA, recognizes the important role that early identification plays in providing intervention for children with disabilities during the critical years of early development. The Joint Committee on Infant Hearing, comprised of the American

Speech-Language Hearing Association, the American Academy of Otolaryngology - Head and Neck Surgery, the American Academy of Audiology, the American Academy of Pediatrics, the Council on Education of the Deaf, and the directors of speech and hearing programs in state health and welfare agencies, has updated a protocol to ensure that all infants are identified by six months of age by endorsing the goal of universal hearing screening of infants. Ongoing monitoring of infants with risk factors for hearing loss will identify those with delayed onset hearing loss. Early identification is critical because hearing loss interferes with communication development and necessitates early intervention both with children and their families or caregivers (Joint Committee on Infant Hearing, 1994).

When assessing the needs of children with hearing loss, one must recognize some conditions that affect individual needs. These include etiology, amount of residual hearing, age of onset, first or native language, cultural and linguistic background, family systems, the presence of additional disabilities, communication skills, and intellectual potential. These conditions, singly or in combination, affect the language proficiency the child has or may acquire, including the ability to speak, to read and write, to use sign languages or cues, to use residual hearing, to speechread, to analyze and communicate experiences, to maximize learning potential, and to be an active participant in the environment.

Students with hearing loss experience linguistic or communication differences which affect the administration and scoring of most assessment tools. Formal test administration is affected when the language skills required to understand the tasks of the test are beyond the child's ability. Language influences may be task-related, response-related, and presentation-related (Moeller, 1988). Test items heavily embedded in English may be biased against students who are deaf or hard of hearing. Appropriately standardized instruments constitute the most objective approach; however, very few instruments have been standardized on persons with hearing loss. Thus, assessors need to decide whether to use a standardized instrument in a nonstandardized situation, to modify standardized instruments developed for hearing populations, or to use instruments that have been modified and standardized for the deaf population or other populations with special learning needs (Moeller, 1985). Modifications to a test which may be appropriate for one population of students with hearing loss may be inappropriate for another (e.g., deaf students from culturally and linguistically diverse backgrounds). The examiner must weigh the relative merits of violations of standard procedures against usefulness of information (California Department of Education, 1986, p.4).

Appropriate assessment is crucial in the development of programs for students who are deaf and hard of hearing. Assessment is discussed in detail in a later chapter.

Prevalence of Hearing Loss in Children and Youth

Reporting accurate demographic trends among the school-aged population with hearing loss is difficult for a number of reasons. First, the population mainstreamed in regular education environments may elude enumeration. Second, some states have not fully implemented P.L. 99-457, now included in P.L. 101-476. Lastly, the tendency to exclude children with unilateral hearing losses or mild to moderate losses from counts may result in the underestimation of children who are in need of direct or related services.

The National Center for Health Statistics (Adams & Benson, 1992) estimated that of the 22,630,000 persons reported with hearing losses in the United States, 1,053,000 or 1.6 percent were under 18 years of age. Brown and Karchmer (1987) attributed a mild decline in the number of school-aged children with hearing loss over the past decade to the success of the rubella vaccination program instituted in 1969.

Gallaudet University's Center for Assessment and Demographic Study (CADS) conducts surveys about children with hearing losses annually. The 1991-92 survey reported information on 47,822 children with hearing loss who were receiving special education. Compared to the child count figures provided by the states, this number represented only 60 percent of all children with hearing loss receiving special education. Federal summaries of child count data indicate 59,312 students with hearing loss between the ages of 6 and 21 were served under the Individuals with Disabilities Education Act (IDEA) and the Elementary and Secondary Schools Education Act (ESEA) Chapter 1 program.

Approximately 16 per 1000 school-aged children have an average hearing loss between 26 and 70 dB (of mild to moderate degree) in the better ear, eight times the number of children who are deaf. This figure probably underestimates the actual number of children with educationally significant hearing losses because the incidence increases as the degree of loss decreases. Academic lags in excess of one year have been found in children with hearing losses in the range of 15 to 26 dB in the better ear (Quigley, 1978). Even lesser degrees of hearing loss are related to an academic deficit of some kind. Saarf (1981) found that of the 33 percent of children who failed a stringent hearing screening test (failure to respond to 10 dB at 6 out of 14 test frequencies in both ears), 57 percent exhibited academic deficits. Given these findings, the percentage of children with educationally significant hearing losses may be greater than 16 per 1000 and is probably closer to 30 per 1000 school children.

Children with unilateral hearing losses should be included in the group considered hard of hearing (Ross, 1990). Although their speech and language ordinarily develop normally, recent research indicated that they failed at school and repeated grades at a much higher rate than children with normal hearing in both ears (Bess, 1986; Oyler, Oyler, & Matkin, 1988). These studies indicated that approximately 24 to 35 percent of children with unilateral hearing losses failed at least one grade in school and that an additional 13 to 41 percent of them required special services in school. For these reasons, children with unilateral hearing losses should also qualify for the appropriate services afforded by IDEA.

Despite weaknesses in survey methods and findings, these prevalence studies serve to underline the fact that hearing loss is a low incidence disability among the population of children for whom the public school systems have program responsibility. This finding in combination with the heterogeneity and the unique communication, cultural, and learning style needs of the population combine to present special challenges to school administrators responsible for providing effective and quality educational programs for children with hearing loss (Ross, 1990).

Definitions

Program administrators and placement committees must understand the ramifications of the terminology they apply to students in reference to the following:

1) communication methodology for classroom management for an individual child, whether deaf or hard of hearing:
   a) an auditory/oral/oral interpreter approach with individual and group amplification options;
   b) a sign language/manual interpreter/ notetaker approach;
   c) a Cued Speech/Cued Speech transliterator approach; or,
   d) a combination of approaches;
2) if a peer group is available that uses a similar communication system; and,
3) if appropriate models of a particular system of communication are available in the educational program.

Bienenstock (1992) compared definitions used in the states for the terms hard of hearing and deaf with the federal definition (34 CFR Sec.300.5). Some states used degree of loss with and without amplification to make the distinction between the two terms. Other states used functional definitions, separating students by whether they process language auditorily or visually. Other states used educational criteria for drawing a distinction between the two groups.

Traditionally, hearing loss has been described based on audiological test results and quantified by type and degree of loss and by the person's ability to process speech and language through the auditory channel. Audiologic definitions are included below to explain the results of audiological measures. However, the administrator should view these terms in the context of family preferences and dynamics when considering psychoeducational, cultural, and linguistic factors in the context of program placement and accommodation decisions. Pertinent terminology include the following:

1) **Hearing loss** means any type of hearing loss (i.e., conductive, sensorineural, or mixed), any degree (ie, mild, moderate, severe, profound), whether unilateral (one ear) or bilateral (both ears), congenital (present since birth) or acquired (sustained after birth), pre- or postlingual (before or after a language system is acquired), peripheral (outer, middle, or inner ear site of lesion) or central (related to brainstem or cortex disorders).

2) **Deaf** by federal definition (34 CFR Sec. 300.5) means a hearing impairment which adversely affects educational performance and which is so severe that the child is impaired in processing linguistic information through hearing, with or without amplification.

3) **Hard of hearing** by federal definition (34 CFR Sec. 300.5) means a hearing impairment, whether permanent or fluctuating, which adversely affects a child's educational performance but which is not included under the definition of "deaf" in this section.

4) A **conductive** hearing loss may be temporary or permanent and is typically due to abnormal conditions of the outer or middle ear or a combination of both. Often in young children, this condition is due to chronic middle ear disease.

5) A **sensorineural** hearing loss is due to disease, trauma, or inherited conditions that affect the sensory and/or nerve cells in the cochlea or inner ear or conditions affecting the eighth cranial (auditory) nerve.

6) A **mixed** loss refers to a combination of conductive and sensorineural components.

7) **Central auditory processing disorder** is used to describe a condition in persons with normal peripheral hearing who have difficulty ascribing meaning to signals heard. This is considered a form of learning disability and may be found in combination with conductive, sensorineural, and mixed hearing loss.

8) The **cause or etiology** of a hearing loss may be endogenous (biologically based due to heredity or Rh incompatibility, for example) or exogenous (linked to viral or bacterial infections, factors at birth, ototoxic medication, trauma to the head, etc.).

Terminology that categorizes a child's hearing loss is often confusing because two children with identical auditory profiles may function in opposite modes; that is, one child with severe or profound deafness may be auditory/oral and dependent on amplification, while another may rely on vision and may communicate primarily through the use of American Sign Language (ASL) and/or English signs or cues. An assessment of hearing loss should contain a description of the child's functional use of residual hearing, not only his audiological designation.

ISSUE II. Educators should be aware of the findings and concerns of the President's commission on education of the deaf.

In general, children with hearing losses tend to lag behind their hearing counterparts in reading and math and have a more profound deficit in reading comprehension than in mathematics computation. However, many children with hearing loss achieve at grade level, with the range extending to 12th grade and beyond. According to the most recent CADS study (Schildroth & Hotto, 1993), the students studied had achieved an average of grade 4.5 in reading by age 17. Despite a low level of achievement, students with hearing loss as a group appear to have achieved at higher levels over the last decade (Allen, 1986; Schildroth & Hotto, 1993).

The low academic achievement levels of children with hearing loss are well known both to legislators and educators. In response to this and other concerns, Congress passed the Education of the Deaf Act (EDA, 1986) and appointed the Commission on Education of the Deaf (COED) to study the status of deaf education in the United States and to recommend creative solutions to address the needs of these children. In their report, *Toward Equality: Education of the Deaf* (1988), members of the Commission reported the status of education for children with hearing loss in this country to be unsatisfactory. Actions required to activate change were rank-ordered by the Commission. Primary among the recommendations were: 1) the need to review the concept of Least Restrictive Environment (LRE) for children with hearing loss and 2) the concern that placement decisions were being made on inadequate assessment information and without consideration of family preferences. The movement of children into regular education environments, while desirable and appropriate for many children with hearing loss, created an educational and psychosocial void for others. Particularly affected were those children who were deaf and used visual communication systems (e.g. American Sign Language, English signs, Cued Speech) as their primary language or those who had failed to develop a functional system for educational purposes.

ISSUE III. Educators should be knowledgeable about the United States Department of Education policy guidance on deaf students' education services.

COED's major recommendations regarding elementary and secondary education had until recently received low priority as federal interpretation of legal mandates continued to support the national trend toward interpreting LRE to be synonymous with inclusion. In October 1992, the U.S. Department of Education (1992) issued a *Policy Guidance on Deaf Students Education Services* to implement several COED recommendations regarding appropriate education for elementary and secondary students who are deaf. The *Policy Guidance* stressed that:

- the disability of deafness often results in significant and unique educational needs for the child; and,
- the major barriers related to learning associated with deafness are related to language and communication, which, in turn, profoundly affect most aspects of the educational process. (p.49274)

Further, the *Policy Guidance* listed factors to be considered in developing an IEP. These are:

- communication needs and the child's and family's preferred mode of communication;
- linguistic needs;

- severity of hearing loss and potential for using residual hearing;
- academic level;
- social, emotional, and cultural needs, including opportunities for peer interactions and communication; and
- consideration of curriculum content and method of curriculum delivery. (p.49275)

The *Policy Guidance* specified that:

> "Any setting, including a regular classroom, that prevents a child who is deaf from receiving an appropriate education that meets his or her needs, including communication needs, is not the LRE for that individual child... Any setting which does not meet the communication and related needs of a child who is deaf, and therefore does not allow for the provision of FAPE, cannot be considered the LRE for that child... The Secretary is concerned that some public agencies have misapplied the LRE provision by presuming that placements in or closer to the regular classroom are required for children who are deaf." (United States Department of Education, 1992b, p. 48275)

The position expressed above dispels the widely held perception that LRE and full inclusion are synonymous. Inclusion can occur only if the individual child "feels included"; that is, concern for the affective domain and the connotations for social-emotional development are considered as well as curriculum matters. Similarly, environmental access is not simply unidimensional but implies access to the whole range of activities encompassed in academic and extracurricular programs. In order to serve students with hearing loss adequately, program administrators must have a clear understanding of the interplay between LRE and full inclusion. Mainstreaming is not a requirement of the law. Consideration of the child's needs, whether they are for self-contained or fully inclusive environments, must be made on an individual basis.

ISSUE IV. Educators should be knowledgeable about the rights of children who are deaf and hard of hearing.

The Council of Organizational Representatives (COR), a coalition of international, national, and regional organizations of, by, and for persons who are deaf and hard of hearing, adopted a Bill of Rights (COR,1992, unpublished) for children with hearing loss. The principles have received widespread support from advocates and groups representing persons with hearing loss. These principles are based on an urgent and substantial need to:

- enhance the development of infants, toddlers, and children who are deaf or hard of hearing and to maximize their potential for language acquisition and academic achievement;
- enhance the independence and employability of individuals who are deaf or hard of hearing and to maximize their potential to be productive citizens; and,
- enhance the capacity of families and schools to meet the special needs of infants, toddlers, and children who are deaf and hard of hearing. (unpublished)

Based on these needs, the COR outlined the rights and an action plan for children who are deaf or hard of hearing. The Bill of Rights stated that:

1) Children who are deaf or hard of hearing are entitled to appropriate screening and assessment of

hearing and vision capabilities and communication and language needs at the earliest possible age and to the continuation of screening services throughout the educational experience.

2) Children who are deaf or hard of hearing are entitled to early intervention to provide for acquisition of solid language base(s) developed at the earliest possible age.

3) Children who are deaf or hard of hearing are entitled to their parents'/guardians' full informed participation in their educational planning.

4) Children who are deaf or hard of hearing are entitled to adult role models who are deaf or hard of hearing.

5) Children who are deaf or hard of hearing are entitled to meet and associate with their peers.

6) Children who are deaf or hard of hearing are entitled to qualified teachers, interpreters, and resource personnel who communicate effectively with the child in the child's mode of communication.

7) Children who are deaf or hard of hearing are entitled to placement best suited to their individual needs including, but not limited to, social, emotional, and cultural needs; age; hearing loss; academic level; mode(s) of communication; styles of learning; motivational level; and family support.

8) Children who are deaf or hard of hearing are entitled to individual considerations for free, appropriate education across a full spectrum of education programs.

9) Children who are deaf or hard of hearing are entitled to full support services provided by qualified professionals in their educational settings.

10) Children who are deaf or hard of hearing are entitled to full access to all programs in their educational setting.

11) Children who are deaf or hard of hearing are entitled to have the public fully informed concerning medical, cultural, and linguistic issues of deafness and hearing loss.

ISSUE V. Educators should be knowledgeable about the specific cultural and linguistic needs of students who are deaf.

Many people who are deaf and are members of the Deaf Community see themselves as a population of Americans tied together by a common heritage, a shared experience, a multi-generational history, and most of all, that key factor of any culture, a language. These individuals often refer to themselves as "Deaf" with a capital "D" (Padden & Humphries, 1988; Woodward, 1972). The language that binds members of the Deaf Community together is American Sign Language, which is recognized as the language of the Deaf Community. American Sign Language (ASL) and a common heritage indicate that, indeed, there is a Deaf culture. Others, especially oral deaf and late deafened persons, have shared values and relate to a common heritage through communication modes that may differ from the signing Deaf Community (e.g., spoken English or Cued Speech).

Deaf Culture and Deaf Role Models

A student's knowledge of Deaf Culture can have a positive influence on self-identity and self-esteem. A mismatch often exists between the requirements of the school culture and the experiential background of children from linguistically and culturally diverse backgrounds. Educators would enhance their insights

into cultural issues associated with education of children who are deaf or hard of hearing by exploring fully cultural and educational aspects of a hearing loss.

Peer interaction with other children who are deaf or hard of hearing as well as interaction with appropriate adult role models who are deaf or hard of hearing is important in developing positive self-identity and self-esteem. In addition, children who are deaf and are from culturally and linguistically diverse backgrounds need access to the Deaf experience and to adult models from those backgrounds. Schools need to be aware of each child's diverse cultural and linguistic needs.

Language

Children who are deaf must have opportunities for natural language development through the visual channel and/or the auditory channel as early as possible. Children who are deaf and are not exposed to early language input are likely to have severe deficits that will have an impact on future learning and will require extensive intervention to facilitate language development.

According to social-interactional theory, language development relies upon communication between mature language users and the child. Social-interaction approaches are not language specific: both American Sign Language and/or English can be facilitated using this type of approach. Whether the language input is ASL and/or English is dependent upon the child's home/school context and the language preferences and knowledge of the family/caregiver. The use of ASL in the instructional process is relatively new. Most school programs that use signed communication in the classroom prefer one of the systems of manually coded English.

Language plays a key role in cultural and ethnic identification. The Commission on Education of the Deaf recognized ASL as one of the minority languages of this country as well as the preferred language of the Deaf Community. The National Association of the Deaf promotes the right of all Deaf individuals to use ASL and English; that is, deaf individuals have the right to choose or utilize whichever language, communication approach, or combination of approaches best meet their personal needs in varying situations (NAD, 1984).

The ability of children who are deaf to cope and function in both the hearing and Deaf cultures is desirable and requires knowledge from a multicultural as well as a multilingual perspective. This approach does not mean the acquisition of English skills should be eliminated or minimized in the education of the Deaf. Instead, this approach will give the Deaf child equal skills in both languages, as well as the awareness of code switching and language choice phenomena.

ISSUE VI. Educators should be knowledgeable about the specific educational needs of children who are hard of hearing.

Children who are hard of hearing typically acquire their speech and language skills primarily through the auditory mode. Early application and appropriate use of amplification form the foundation of a successful aural rehabilitation program for children whose primary mode of communication is auditory-oral (Ross, 1990).

Historically, professionals have focused extensively upon speech and language development, sometimes to the neglect of educational development. The assumption has been that if speech and language are developing as expected, then educational achievement will logically follow. Unfortunately, this has

not been the case, due in part to the poor acoustic environment in which the child with a hearing loss is placed in the average classroom. Teachers must place the child who uses the auditory channel for learning in the most favorable acoustic environment, and the student must use the best possible amplified signal if educational achievement is to proceed optimally. School personnel must monitor the amplification systems (hearing aids, FM systems, loops, etc.) daily to ensure that they are functioning properly (Ross, 1990).

The first step in serving children who are hard of hearing is to ensure optimal use of their residual hearing. The second step is to provide whatever other habilitation/remediation services the student requires, including use of the visual channel in a supplemental manner, aural habilitation, and speech and language support. To maximize use of the auditory channel, students must have access to appropriate amplification systems (hearing aids and FM systems), appropriate classroom seating for purposes of speechreading, related aural rehabilitation, speech, and language services (Ross, 1990).

Reading is a crucial skill in education and is ordinarily based on preexisting linguistic skills developed through audition. Therefore, audition is not just another input for hard of hearing children but an overwhelmingly important one for learning. Vision does play an important role for speech perception in particular, but its contribution to the process must be seen as a supplement to audition and not as a substitute for it (Ross, 1990).

In the last 20 years, a vast body of literature has arisen on the topic of chronic fluctuating otitis media. Most of the conclusions uniformly indicate that auditory and verbal skills are affected (Feagans, Blood & Tubman, 1988). Children with histories of early chronic otitis media demonstrate greater difficulty on average than children without this background on such tasks as selective attention, sequential memory, phonemic synthesis, and oral spelling. They also display more academic, phonological, and linguistic deficiencies than children without a history of early middle ear problems (Kavanagh, 1986).

Not every student with a mild or even a moderate hearing loss will be handicapped communicatively or educationally by the hearing loss. Each student should be evaluated and managed on an individual basis. A picture of the "average" student who is hard of hearing may provide a helpful frame of reference but should never be used to make predictions. Based on research findings, children with even minimal, fluctuating, unilateral, and high frequency losses are at risk academically. For this reason, educational programming must address classroom structure, access to technology and amplification, and related services needs (Ross, 1990; Hawkins, 1990).

ISSUE VII. Educators should be knowledgeable about population demographics and the educational implications of service to the increasing numbers of students who are deaf or hard of hearing and come from diverse ethnic, linguistic, and racial backgrounds.

According to the American Council on Education (1988), by the year 2000, one-third of school-aged children in the general population will be from African American, Hispanic, American Indian or Asian/Pacific Islander families. The demographics of the school-aged population that is also Deaf will change in much the same manner. Data from the Center for Demographic Studies at Gallaudet University revealed that the population of children who are Deaf and from ethnically diverse backgrounds closely parallels the presence of these students in the general school-aged population (CADS, 1991-1992). As the number of ethnically diverse students increases in the general population, the number of teachers from underrepresented ethnic groups is declining (Michael-Bandele, 1993). Historically,

the degree to which members of ethnically diverse populations enter the field of education of the Deaf has been negligible (Corbett & Jensema, 1981). In fact, teachers who are Deaf are few in number, and ethnically diverse teachers who are Deaf are an extremely rare commodity. Clearly, there is a need for greater diversity among professional educators of children who are Deaf. It is also critical that teachers, both Deaf and hearing, develop a deeper understanding of and respect for the cultural dimensions of the children whom they teach (Christensen & Delgado, 1993).

Reagan (1990) has suggested that "a useful way to envision the diversity that so strongly affects any meaningful discussion of culture and ethnicity in the context of deaf education is to 'map' an individual's cultural group membership(s)" (p. 80). He uses three overlapping circles to display how three different cultural groups, Deaf culture, the dominant hearing culture, and the culture of the family, are mutually influential. The interrelationships among cultures are further influenced by factors such as sex, gender, age, and social status. Social theorists contend that the outcome of the dynamic, complex interaction of cultures is an individual experience that is qualitatively different from that of a monocultural or bicultural person (Newman, 1973). Teachers, administrators, and parents of profoundly, congenitally Deaf children must learn to understand these children from a complex, multicultural perspective. The communicative and cognitive potential of these children can be achieved effectively through an approach which capitalizes on the unique learning style and strength of each learner.

Grace (1993) pointed out the fact that "educators typically have very little awareness of the sociocultural realities of children from families with little economic or political power" (p. 31). Further, African American, Hispanic, American Indian or Asian/Pacific Islander parents of children who are Deaf are less likely to know a signed language and are less likely to be aware of special services for their children and themselves. Consequently, these families and their children may depend on educators to provide much needed support and guidance. Educators, then, must be prepared to meet the diverse needs of the multicultural communities that they intend to serve.

Complex issues of assessment and placement of children who are Deaf are further complicated when the child comes from a family which speaks a language other than English. The literature (Cohen, Fischgrund, & Redding, 1990; Gerner de Garcia, 1993) has documented underachievement of African American and Hispanic Deaf children. Unresolved home-school conflicts may have a lasting effect on the ultimate school success of children who are Deaf and are from ethnically diverse backgrounds. Schools can be equipped with personnel and programs to bridge the cultural differences between home and school and provide clearly communicated information at all levels. The inability to communicate in English should not prevent concerned parents from becoming integrally involved in educational decisions for their child who is deaf.

ISSUE VIII. Educators should be knowledgeable of specific educational needs of students with hearing loss and additional disabilities.

The most frequently cited source of data related to concomitant disabilities associated with hearing loss is the Annual Survey of Hearing Impaired Children and Youth conducted by the Center for Assessment and Demographic Studies at Gallaudet University. This database does not represent a complete count of all children with hearing loss as many children have mild or moderate losses. These children may be served in general education programs, and therefore, not included in the Annual Survey data (Schildroth & Hotto, 1993). For example, many children with hearing loss due to otitis media are at high risk for

learning disabilities (Reichman & Healy, 1983) and have multifaceted educational needs, as do children with greater degrees of hearing loss and learning disabilities (Powers & Elliott, 1993). Schildroth and Hotto (1993) reported that the percentage of students with hearing loss and additional disabilities has remained relatively stable between the 1984-85 and 1991-92 academic years at 30 to 33 percent. The two most frequently reported additional disabilities are mental retardation and learning disabilities, accounting for 8 and 9 percent respectively of additional disabilities among students with hearing loss in 1991-92 (Schildroth & Hotto, 1993). The percent of students with hearing loss and learning disabilities remains questionable due to the lack of an accepted definition for this population and the exclusion clause in the federal definition of learning disabilities (Powers & Elliott, 1993; Laughton, 1989). However, many students with hearing loss have additional learning problems due to a variety of reasons.

Students with hearing loss and additional disabilities have diverse educational needs which may result not only from mental retardation and learning disabilities but from concomitant visual disabilities, emotional/behavioral disabilities, physical disabilities, health related problems, and other factors (Powers & Elliott, 1993; Schildroth & Hotto, 1993). Students with hearing loss and additional disabilities must be carefully assessed from a multidisciplinary perspective with specific attention to comparative data obtained from various sources in a variety of settings, both educational and noneducational. Data must be obtained relative to auditory, visual, intellectual, attention, memory, metacognitive, social, motoric, and communicative abilities, and related to teaching and learning environmental variables in order to plan effective programming and learning experiences for students with hearing loss and additional disabilities (Powers & Elliott, 1993). A creative approach to curriculum planning and implementation is needed for students with hearing loss and additional disabilities so that these children are not lost in categorical groupings (Powers & Elliott, 1993). Collaborative efforts among professionals, paraprofessionals and families are essential in order for students with hearing loss and additional disabilities to be successful in educational settings and in life (Powers & Elliott, 1994, manuscript in preparation).

ISSUE IX. Educators should be knowledgeable about the need for environmental access and access to technology.

To enable students who are deaf and hard of hearing to have full access to communication and information within the school setting, appropriate classroom adaptations and use of technology must be considered during the IEP process. Application and maintenance of technology and assistive devices should be considered in at least the following areas:

- management of the visual environment and reduction of visual distractions
- control and reduction of reverberation and background noise
- amplification of speech
- enhancement of presentations of information

Two elements play a decisive role in determining the success of a student's accessibility to language and learning in an educational setting: design and optoacoustic technology, both assistive and instructional. These are discussed in greater detail in later chapters (Massachusetts Department of Education, 1989, p.39).

Issues of access to technology for all students with special learning needs are addressed by the Americans with Disabilities Act (P.L. 101-366). This in turn has implications for the manner in which school systems are required to respond to access issues for students with hearing losses. For more information regarding access to technology, consult the Americans with Disabilities Act.

Summary

This chapter introduced programming issues crucial to service needs of students who are deaf or hard of hearing. Suggestions are provided regarding the knowledge base from which service providers must operate in order to develop programs which are appropriately responsive to the diverse needs of this population. Although there is general agreement among professionals in the field regarding programming issues, a few divergent philosophical opinions are in evidence. An attempt has been made to treat the issues even-handedly and to focus on those considerations that ensure quality programs. The succeeding chapters describe programming elements and resources that will assist the reader in responding to these issues in appropriate ways. Given a firm foundation of knowledge found in this chapter and specific suggestions in subsequent chapters, the reader should be able to develop optimum educational opportunities for students who are deaf or hard of hearing.

References

Adams, P.F., & Benson, V. (1992). Current estimates from the National Health Interview Survey, 1991. *Vital and Health Statistics*, Series 10. National Center for Health Statistics.

Allen, T. E. (1986). Patterns of academic achievement among hearing-impaired students: 1974 and 1983. In A.N. Schildroth & M.A. Karchmer (Eds.), *Deaf children in America*. San Diego: College-Hill Press.

Allen, T.E., & Osborn, T. (1984). Academic integration of hearing impaired students: Demographic, handicapping, and achievement factors. *American Annals of the Deaf*, 129(2), 100-113.

Amendments to the *Education of the Deaf Act of 1986, P.L. 102-421* (1992).

Amendments to the *Education of the Handicapped Act of 1974, P.L. 99-457* (1986).

Amendments to the *Individuals with Disabilities Education Act-Part H, P.L. 102-119* (1991).

American Council on Education (1988). *One-third of a nation: A report of the commission on minority participation in education and American life*. Washington, D.C.

Americans With Disabilities Act (1990). P.L. 101-336.

Bess, F. (1986). The unilaterally hearing-impaired child: A final comment. *Ear and hearing*, 7, 52-54.

Bienenstock, M. (1992). Least restrictive environment policy and procedure as it relates to state implementation in special education. Unpublished doctoral dissertation, University of Maryland, Washington, DC.

Borrild, K. (1978). Classroom acoustics. In M. Ross & T. Giolas (Eds.), *Auditory management of hearing impaired children*, 145-179. Baltimore: University Park Press.

Brown, S.C., & Karchmer, M.A. (1987). *Who will be served? Charting the trends*. Washington, D.C.: Gallaudet Research Institute.

California Department of Education (1986). *Program guidelines for hearing impaired individuals*. Sacramento, CA: California Department of Education. Pub. No. 0-8011-0309-6.

Center for Assessment and Demographic Studies (1991-92). *Annual survey of hearing impaired children and youth*. Washington, D.C.: Gallaudet University.

Christensen, K., & Delgado, G. (1993). *Multicultural issues in deafness*. White Plains, N.Y.: Longman.

Cohen, O., Fischgrund, J., & Redding, R. (1990). Deaf children from ethnic and racial minority background: An overview. *American Annals of the Deaf*, 135(2), 67-73.

Commission on Education of the Deaf (1988). *Toward equality: Education of the Deaf*. Washington, DC: United States Government Printing Office.

BEST COPY AVAILABLE

Corbett, E., & Jensema, C. (1981). *Teachers of the hearing impaired: Descriptive profiles*. Washington, DC: Gallaudet Press.

Council of Organizational Representatives (1992). *Bill of rights for deaf children*. Unpublished.

Elementary and Secondary Education Act (1988). *P.L. 89-313*.

Feagans, L., Blood, I., & Tubman, J.G. (1988). Otitis media: A model of effects and implications for intervention. In F. Bess (Ed.), *Hearing impairment in children*, 347-374. Baltimore: York Press.

Gerner de Garcia, B. (1993). Addressing the needs of Hispanic Deaf children. In K. Christensen & G. Delgado, (Eds.), *Multicultural issues in deafness*. White Plains, NY: Longman.

Goals 2000: Educate America Act, P.L. 103-227 (1994).

Grace, C. (1993). A model program for home-school communication and staff development. In K.Christensen & G. Delgado (Eds.), *Multicultural issues in deafness*. White Plains, NY: Longman.

Harkins, T. (1993). Future goals: Application of the Goals 2000: Education America Act to individuals with disabilities. *Exceptional parent*, (9), 25-27.

Hawkins, D.B. (1990). Amplification in the classroom. In J. Davis (Ed.), *Our forgotten children: Hard of hearing pupils in the schools*. Second edition. Bethesda, MD: Self Help for Hard of Hearing People, Inc.

Holt, J., & Allen, T. (1989). The effects of schools and their curricula on the reading and mathematics achievement of hearing impaired students. *International Journal of Educational Research*, 13(5).

Individuals with Disabilities Education Act, P.L. 101-476 (1990).

Joint Committee on Infant Hearing (1994). Draft position statement. Rockville, MD: American Speech-Language-Hearing Association.

Karchmer, M. (1985). A demographic perspective. In F.Cherow, N. Matkin, & R. Trybus (Eds.), *Hearing-impaired children and youth with developmental disabilities: An interdisciplinary foundation for services*. Washington, DC: Gallaudet University Press.

Kavanagh, J.F. (1986). *Otitis media and child development*. Parkton, MD: York Press.

Laughton, J. (1989). The learning disabled, hearing impaired student: Reality, myth, or overextensions. *Topics in Language Disorders*, 9(4), 70-74.

Massachusetts Department of Education (1989). *Guidelines for the education of deaf and hard of hearing students*. Pub. No. 15927-2000-70.

Michael-Bandele, M. (1993). *Who's missing from the classroom: The need for minority teachers*. Washington, DC: AACTE.

Moeller, M.P. (1988). Language assessment strategies. *Journal of the Academy of Rehabilitative Audiology*. (Monograph Supplement), 21, 73-99.

Moeller, M.P. (1985). Developmental approaches to communication assessment and enhancement. In E. Cherow, N. Matkin, & R. Trybus (Eds.), *Hearing-impaired children and youth with developmental disabilities: An interdisciplinary foundation for services*. Washington, DC: Gallaudet University Press.

National Association of the Deaf (1984). NAD position paper on communication and language. Unpublished position paper.

National Technical Institute for the Deaf (1992). *Strategic plan*. Rochester, NY: NTID.

Newman, W. (1973). *A study of minority groups and social theory*. New York: Harper & Row.

Olsen, W. (1988). Classroom acoustics for hearing impaired children. In F. Bess (Ed.), *Hearing impairment in children*, 266-277. Parkton, MD: York Press.

Oyler, R.F., Oyler, A.L., & Matkin, N.D. (1988). Unilateral hearing loss: Demographics and educational impact. *Language, Speech, and Hearing Services in the Schools*, 19, 201-209.

Padden, C., & Humphries, T. (1988). *Deaf in America: Voices from a culture*. Cambridge, MA: Harvard University.

Powers, A., & Elliott, R. (1993). Deaf and hard of hearing students with mild additional disabilities. In M. Welch (Ed.), *Research and practice in deafness: Issues and questions in education, psychology, and vocational service provision*. Springfield, IL: Charles C. Thomas.

Powers, A., & Elliott, R. (1994). Collaborative/consultation and effective educational programming for deaf and hard of hearing students with mild additional disabilities. (Manuscript in preparation.

Quigley, S.P. (1978). Effect of hearing impairment in normal language development. In F. Martin (Ed.), *Pediatric Audiology*, Englewood Cliffs, NJ: Prentice-Hall.

Reagan, T. (1990). Cultural considerations in the education of Deaf children. In D. Moores & K. Meadow-Orlans (Eds.), *Education and developmental aspects of deafness*. Washington, DC: Gallaudet University Press.

Reichman, J., & Healy, W. (1983). Learning disabilities and conductive hearing loss involving otitis media. *Journal of Learning Disabilities*, 16(5), 272-278.

Ross, M. (1990). Definitions and descriptions. In J. Davis (Eds), *Our forgotten children: Hard-of-hearing pupils in the schools*. Second edition. Bethesda, MD: Self Help for Hard of Hearing People.

Saarf, L.S. (1981). An innovative use of sound field amplification in the classroom. In R. Roeser & M. Downs (Eds.), *Auditory disorders in school children*. New York: Thieme-Stratton, Inc.

Schildroth, A. (1988). Recent changes in the educational placement of deaf students. *American Annals of the Deaf*, 133(2), 61-67.

Schildroth, A.N., & Hotto, S.A. (1993). Annual survey of hearing impaired children and youth: 1991-92 school year. *American Annals of the Deaf*, 138(2), 163-171.

United States Department of Education (1992a). *The fourteenth annual report to Congress on implementation of the Individuals with Disabilities Education Act*. Washington, DC: U.S. Government Printing Office.

United States Department of Education (1992b). Deaf students education services: Policy Guidance. *Federal Register*, 57(211), October 30, 1992, 49274-49276.

Woodward, J. (1972). Implications for sociolinguistics research among the Deaf. *Sign Language Studies*, 1, 1-7.

2

Supportive Structures and Administration

The purpose of this chapter is to familiarize state and local agency personnel with the issues surrounding the administrative structures necessary to support an appropriate education for students who are deaf or hard of hearing. While education program administrators have responsibility for assuring appropriate education for all students, the unique needs of students who are deaf or hard of hearing present responsibilities that may not be part of their present professional practice. The focus of this chapter is to provide general guidance on the role the administrator can play in successfully operationalizing and maintaining a quality education for students who are deaf or hard of hearing.

The following six (6) issues are identified and discussed in this chapter:

ISSUE I Education agencies should establish and maintain a unit within their auspices to ensure that the provisions and policies related to students who are deaf or hard of hearing and the guidelines presented herein are implemented.

ISSUE II Education agencies should ensure that all personnel have the knowledge necessary to fulfill their roles relative to students who are deaf or hard of hearing.

ISSUE III Education agencies should ensure that the assessment of each student is ongoing and appropriate for educational decision making.

ISSUE IV Education agencies should ensure that all appropriate program options and services are available to meet the unique needs of students who are deaf or hard of hearing.

ISSUE V. Education agencies should ensure that there are adequate resources and facilities and that these are appropriately managed.

ISSUE VI Education agencies should ensure that there is a process in place to assess the effectiveness of the entire program.

ISSUE I. Education agencies should establish and maintain a unit within their auspices to ensure that the provisions and policies related to students who are deaf or hard of hearing and the guidelines presented herein are implemented.

There are many ways in which states organize and structure oversight of the education of students who are deaf or hard of hearing. Some states have commissions, some have advisory councils attached to the SEA, some have other organizational structures, and some states provide no oversight at all. Regardless of how individual states have chosen to structure the monitoring and evaluation of programs and delivery of services, every state should establish a mechanism to ensure that this activity does take place. Every state should have a unit whose primary responsibilities are to oversee and coordinate all programs and services to students who are deaf or hard of hearing.

In those states which have rural areas, special efforts will be necessary to assure that an array of placement options and appropriate support services are available. The unit in these instances has a primary function to assist LEAs in acquiring appropriate services or in consolidating services. Rural areas often lack expertise because of student numbers. Should the education agency fail to bring about consolidation of services, then it should assist the school in engaging the services of consultants with expertise in the field.

ISSUE II. The education agency should ensure that all education personnel have the knowledge necessary to fulfill their roles relative to students who are deaf or hard of hearing.

The quality of education is as good as the quality of personnel who provide it. Consequently, the outcomes for students who are deaf or hard of hearing are directly linked to the qualifications of the individuals working with them. Personnel working with this population should have knowledge of the communication and educational issues associated with hearing loss which differentiate these children's needs from others. Issuance of emergency certification and endorsements in the area of education of students who are deaf and hard of hearing is not sufficient to ensure appropriate personnel preparation in this area. When emergency status is used, the agency should at minimum acquire consultative services from an individual who is skilled and knowledgeable in the area until the staff member on emergency status is fully certified.

Of equal importance is the assurance that these qualified individuals are made available to the student. This requires vigilance on the part of state monitoring teams. Although P.L. 101-476 (IDEA) requires that placement decisions be made based on the dictates of the IEP, it still occurs that children are placed in those programs which are readily available, and the IEP is tailored to the process not to the needs of the child and family. No progress can be made in assuring that the issues discussed below are addressed until education agencies make a commitment to this fundamental requirement of the law.

Knowledge of Various Communication Issues

The communication issue is not easy to address because it is so multifaceted. There are many options, and no one language or communication mode is appropriate for all children. Some children may utilize a variety of communication formats. There are, however, some basic concepts which must be operationalized to ensure that any given child is being educated in an appropriate communication environment.

The student and his/her parents/caregivers should be involved in the choice of language or communication modes. Education agencies should ensure that parents/caregivers have adequate, unbiased information regarding communication options so they may make a well-informed, unemotional decision.

Cultural, linguistic, familial, social, audiological, and cognitive factors should be considered. Education agencies should design a monitoring process to ensure that these factors have all been considered before a decision regarding language or communication mode is made.

The language or communication mode chosen may vary with any given child from one situation to another. For example, although a child might function well auditorally on a one-to-one basis, she/he may require a form of visual communication in a large group setting. Education agencies should establish procedures which ensure that the communication needs of each child are evaluated in multiple environments so that a variety of communication options are available if needed.

A well-managed auditory environment is essential to ensure that children who function in an auditory mode have an appropriate listening environment, including provision of technological support to maintain FM equipment and hearing aids. Signal-to-noise ratio and reverberation should be accounted for, or the setting may fail the child rather than the mode failing the child.

A well-managed visual environment is essential for all students who are deaf or hard of hearing, but is especially important for those whose primary avenue for learning is vision. Lighting, color, and visual distractors must be carefully managed. In addition, teachers who possess poor communication skills may fail to meet the child's needs. Education agencies should establish procedures for evaluating the communication performance of teachers to ensure that they are proficient.

Education personnel must be made aware of the complexity of the communication issues. Education agencies should establish an ongoing effort through their Comprehensive System of Personnel Development (CSPD's) to raise the level of knowledge and skills possessed by those who work with students who are deaf or hard of hearing.

Knowledge of Cultural Issues

The United States of America is a land of great cultural diversity. Cohen (1993) reported estimates that by the year 2050, 40% of all children will come from non-white backgrounds. Educators who serve students with hearing loss and who are from diverse cultural and linguistic backgrounds should develop procedures which lead to cultural sensitivity by addressing the statements listed below:

- Develop an awareness and acceptance of cultural differences, an awareness of their own cultural values, an understanding of the dynamics of difference in the teaching process, and basic knowledge about children's cultures.
- Recognize that many minority children face problems of social adjustment and academic performance in school because of cultural and/or language differences.
- Recognize the distinction between various cultural minority groups and use this knowledge to design and implement multicultural education.
- Recognize and understand the bases and nature of individual minority students' cultural and language frames of reference and their sense of social identity in order to understand why these factors affect the process of minority schooling, particularly school orientation and behaviors.

- Acknowledge minority students' experiences of discrimination, stereotyping, intellectual or social isolation within the school culture; work from the students' feedback to implement changes in the destructive nature of the dominant culture transmitted by the school.

Knowledge of The Nature of Hearing Loss

There are varying auditory profiles; therefore, there is no "one size fits all" approach to dealing with hearing loss. Education personnel should be familiar with the factors pertaining to hearing loss. These factors include but are not limited to the following:

- Hearing loss occurs on a continuum from within the normal range to profound. Each pattern of loss is different. Even a mild or unilateral loss may influence a child's school performance.
- Hearing loss interferes with the quality of sound heard, not just the quantity. Both loudness and the distortion effects of hearing loss may need to be addressed depending on the type of loss and the child's capacity to utilize residual hearing.
- Whether a loss occurred prelingually (before age 3) or postlingually (after age 3) has a significant influence on speech and language development. Another factor to consider is the language used in the home. An exception to this is when a child who is deaf has parents who are deaf. In this instance, children who are deaf usually develop language at the same rate and sequence as hearing children.
- Good speech does not necessarily mean good hearing. Many people assume that the better a person's speech is, the better also is his/her hearing. This is not necessarily the case. One individual with good speech may have less hearing than another individual with less intelligible speech.
- The major known categories of etiology of hearing loss (heredity, maternal rubella, prematurity, otitis media, and viruses such as meningitis, encephalitis, mumps, and cytomegalovirus) are associated with a set of concomitant conditions and/or sequelae which influence the learning characteristics of the student. Personnel need to understand these so they may make appropriate provisions for the individualized program.
- Hearing losses may be conductive, sensorineural, or mixed. A fluctuating conductive component may cause the student's loss pattern to vary from day to day.
- Personnel should consider the difference between a student's aided audiogram, unaided audiogram, and the ability to process spoken language auditorally with or without visual supplement during programming and placement decisions. For example, given two students with the same degree of severity of hearing loss on their unaided audiograms, one might receive excellent benefit from the hearing aid while the other might receive little or no benefit.

Knowledge of the Effects on the Family

Most families' first real experiences with hearing loss occur with the birth of their child who is deaf or hard of hearing. Fear of the unknown spurred on by the stereotypes perpetuated by the larger culture often place families in extreme emotional crisis. The child who is deaf or hard of hearing may experience delayed psychological development during this initial period due to a number of factors, including lack of communication in the home.

While the initial crisis may fade away, many life events and changes within the overall development of the family unit can throw the family back into crisis. Education personnel should be aware of the types of decisions families face and of the family's changing needs throughout the education of their child. These include the following:

- effects on parents and extended family members;
- effects on siblings;
- effects on the changing dynamics of the family; and,
- effects on family finances, time, and energy.

Response to State and Professionally Recognized Standards

Education agencies should ensure that personnel who work with students who are deaf or hard of hearing meet not only standards set by their states but the standards set by such learned societies and organizations recognized with credentialing responsibility as the National Council for the Accreditation of Teacher Education (NCATE), Council on Education of the Deaf (CED), Council for Exceptional Children (CEC), American Speech-Language and Hearing Association (ASHA), Registry of Interpreters of the Deaf (RID), and other organizations as appropriate.

Consolidation of Services

When children who are deaf or hard of hearing live in rural/isolated areas where expertise is not available or is cost prohibitive, SEA's should assist LEA's in consolidating or regionalizing their services. Through its state monitoring process SEA's should identify those districts with so few children who are deaf or hard of hearing that an adequate cadre of support services is cost prohibitive and should initiate a process for assisting districts to consolidate or regionalize. Because states may have different organizational structures, SEA's should work to establish guidelines for consolidation or regionalization efforts.

ISSUE III. Education agencies should ensure that the assessment of each student is ongoing and appropriate for educational decision making.

Assessment is a crucial factor in providing services to students who are deaf or hard of hearing and is performed for at least three reasons: screening for early and ongoing identification, evaluation for program and placement decision-making, and assessment to monitor and document progress. The writers of this document cannot stress enough that evaluations must be conducted by individuals who can communicate in the child's primary language or preferred communication mode. In addition, evaluations should be conducted only by certified professionals who possess knowledge of the assessment process itself and understand the unique ramifications and complexity of issues faced by students who are deaf and hard of hearing. This area is discussed more fully in the chapter on Assessment.

Procedures for Early Identification of Hearing Loss

Johnson, Mauk, Takekawa, Simon, Sia, and Blackwell (1993) stated that effective systems are those which go beyond screening to provide an integrated system of early intervention services, family support, audiological and medical services, financing, and personnel preparation. These components should be coordinated effectively with each other and should be institutionalized within the state. In addition to providing screening for early detection and intervention, education agencies should ensure that schools provide routine screening at reasonable intervals throughout the entire school experience.

Screening in the earliest grades is insufficient because students may have fluctuating losses, may develop hearing losses as a result of etiologies which do not manifest themselves until later years, or may sustain environmental damage over time as a result of behaviors or lifestyles which jeopardize hearing ability. As with early identification, later identification will only be effective if the system has a process to ensure follow up. Education agencies should establish procedures for working cooperatively with families, public health agencies, and other state and local resources to ensure that appropriate audiological and medical follow up occurs and that, where warranted, the child receives amplification and appropriate educational interventions.

Once a child's hearing loss is identified, the child's family should receive early intervention services. To assist the family during the initial crisis of identification of hearing loss and to ensure that appropriate educational programming and placement decisions are made, identification of children as deaf or hard of hearing should occur at this time. Generic or non-categorical descriptors such as "developmentally delayed" provide generic services which are usually appropriate for other children with disabilities but are inappropriate when facing the unique communication and educational challenges of children who are deaf or hard of hearing.

Education agencies should ensure that all provisions under the law are followed when assessing a student's present level of functioning and when determining appropriate programming and placement for a student who is deaf or hard of hearing.

Procedures for Monitoring and Documenting Student Progress

Education agencies should review programming and placement decisions to determine whether students are making adequate progress. This entails close scrutiny of the appropriateness of the student's education program, language or mode of communication, and placement. Often students are placed in an option and begin to fail, not because they have failed in that option, but because that option has failed them. There should exist a process to monitor a student's progress throughout the school year in order to make necessary adjustments and changes as soon as the need is detected.

Classroom performance of students should be assessed through the use of authentic instruments and techniques which are curriculum-based. Education agencies should establish safeguards so that students who are beginning to experience difficulty may receive the necessary intervention to keep from falling behind. Education personnel should consider adjustments in the instruction, the characteristics of the environment, the quality and ease of teacher-student communication, or other factors. Many students who are deaf or hard of hearing may need more than annual testing and three-year updates to monitor their progress or classroom performance.

Annual performance assessment should indicate a student's achievement based on both hearing and deaf norms. Other monitoring and assessment should allow for periodic evaluation during the school year including periodic parent/caregiver meetings with teachers and other professionals.

ISSUE IV. Education agencies should ensure that appropriate program options and services are available to meet the needs of students who are deaf or hard of hearing.

Determining the appropriateness of programs for students who are deaf or hard of hearing is a complex process. Educators should give careful consideration to the unique characteristics of the students. These may vary greatly from one individual to another and may require a broad range of program options to meet the individual student's needs.

Existence of Appropriate Language and Communication Mode Options

Effective communication is essential to the human experience. Effective education fosters and enriches communication with all individuals within the learning environment. Children form concepts, expand their vocabularies, learn values, and broaden their educational horizons all through the channel of communication (Sheetz, 1993). The ability to communicate effectively is necessary for cognitive development, social and emotional well being, linguistic competence, and academic growth.

Children who are deaf or hard of hearing communicate in a variety of effective language and communication modes. Many individuals wrongly assume that the inability to hear means an inability to communicate or function effectively.

Many children who are deaf or hard of hearing use a unique language, American Sign Language, which may be their primary or native language. Others prefer to express and receive English orally and aurally, with or without visual signs or cues. Other students who are deaf or hard of hearing may prefer to use a combination of language or communication modes. In order to meet the individual needs of these students, a variety of options must be available when determining an appropriate program.

Students who are deaf or hard of hearing should have access to effective communication development. They have the right to understand, to be understood, and to participate in the dynamics of the situation, in homes, schools, and communities.

Students who are deaf or hard of hearing have the right to clear, accurate, and direct communication access in their preferred language or communication mode, in classrooms, and in the total educational environment. For example, the student whose preferred communication mode is oral is entitled to an education in which teachers and peers communicate orally/aurally. The student whose preferred language is American Sign Language is entitled to an education in which teachers and peers communicate proficiently in that language. When this is not possible, education personnel should employ skilled, certified interpreters or transliterators, depending on the needs of the child.

Students who are deaf or hard of hearing should receive an education in which their unique language or communication mode is respected, used and developed to an appropriate level of proficiency. True access to education programs will occur when agencies show respect for a student's preferences by providing appropriate services.

Existence of Appropriate Placement Options

The isolating nature of deafness presents major challenges to our educational system, both in terms of transmitting knowledge, a major purpose of education, and in developing the self-esteem and identity of children who are deaf (U.S. Department of Education, 1992). This is especially evident when considering the placement or Least Restrictive Environment for students who are deaf or hard of hearing. Placement decisions may be potentially harmful, and the effects on the child or on the quality of services require earnest consideration. Failure to consider the potential harmful effects may lead to inappropriate placements, isolation, and wasted potential especially during the optimal periods of language learning. For many students who are deaf or hard of hearing, placement decisions have been "so detrimental that the resulting education was not appropriate to the child's needs" (COED, 1988 p.25). Matching the individual needs of the child with the appropriate placement may be challenging for some LEA's because of the varying needs of students. Ensuring that placements are made on an individual basis is vital and will require an LEA to have available various alternative placements in addition to the regular education environment.

Programs for students who are deaf or hard of hearing should provide a wide range of services to meet the individual needs of the student. Students who are deaf or hard of hearing should have equal communication access, opportunities for social and emotional growth, opportunities for cultural awareness and identification, access to technological devices and equipment that are maintained in usable condition, access to a sufficient number of age and language peers to foster positive interaction, and educators who can effectively communicate with them including role models who are deaf or hard of hearing. LEA's which cannot provide the aforementioned should actively seek to consolidate or regionalize their services with other districts in order to meet the individual student's needs and to ensure that the student's placement is appropriate and least restrictive. The IEP/placement committee should consider the following factors:

- communication access;
- child's preferred language or mode of communication;
- social and emotional development;
- degree of hearing loss;
- opportunities for instruction through direct communication;
- interpreter quality and availability;
- availability of peers who are deaf or hard of hearing;
- academic level;
- qualifications of personnel;
- access to support services;
- cultural and linguistic needs;
- availability of technology;
- parental choice and child's placement preference; and,
- language abilities of the child.

Education agencies should recognize that for students who are deaf or hard of hearing, any one of the alternatives on the continuum of placements may constitute a Least Restrictive Environment, without giving weight to one particular option. LEA's should inform parents/caregivers of all placement options annually during the IEP meeting. Discussion of why a certain option was not chosen should be conducted. Education agencies should respect the preferences of parents/caregivers and should reflect their choice in the final decision.

Provision of Appropriate Curriculum Options

Educational objectives for students who are deaf or hard of hearing from preschool through postsecondary should not differ from educational objectives for hearing students. In addition to the requirements of regular education, the following components should be provided:

Life Skills Curriculum. Students who are deaf or hard of hearing should develop practical skills for independent living and the workplace as part of their education plan. Direct experience in apprenticeship and on-the-job training programs is strongly encouraged. Appropriate support services such as job coaches and interpreters are equally as important in the work situation as in the academic classroom.

Deaf Studies Curriculum. A series of activities focusing on the history, folklore, language, and culture of people who are deaf or hard of hearing should be provided to students preschool through high school. Multicultural aspects of the Deaf Community should also be included in the curriculum as well as how to use an interpreter, TDD/TTY, and relay systems. Instruction should be provided by qualified instructors who are deaf or hard of hearing, or other community resources as available.

Communication Skills Curriculum for Families. Most children who are deaf or hard of hearing have parents/caregivers who are hearing. In addition, the majority of early intervention educators with whom parents first have contact, are hearing. Rarely do parents encounter in the early stages, adults who are deaf or hard of hearing or signing models in order to develop natural/native-like signing skills.

Families who choose a sign language option need additional support. Developing proficiency in sign language takes dedication and sequential instruction. Families should be assisted in the development of signing skills from the time of identification and throughout their child's education years by qualified, proficient instructors.

American Sign Language (ASL) Curriculum. Students whose preferred language is American Sign Language should have formal and consistent instruction in that language throughout their education years. The instruction in ASL should be in addition to, not instead of English instruction, and should be systematic rather than left up to chance. Students for whom English is their native language and who plan to attend postsecondary programs where instructors who communicate in ASL are employed, might choose as course electives during high school (or earlier at the discretion of the IEP committee), formal instruction in ASL as a second language. This training may facilitate transition from high school to those postsecondary education programs where ASL may be used. Formal instruction in ASL should be provided by qualified, proficient instructors.

Provision of Appropriate Support Services

Children who are deaf or hard of hearing are entitled to full access to all programs in their education settings. They should have direct and appropriate access to all components of the education process, including recess, lunch, and extracurricular activities. Education agencies should provide appropriate support services based on the individual needs of the student.

Often parents feel frustrated during the IEP meeting and end up negotiating for appropriate support services. Appropriate support services are crucial to the design of an appropriate educational program. Failure to provide appropriate support services, based on the individual needs of the child, is a violation of IDEA. Students should not be required to fail first before appropriate services are provided.

Education agencies should not minimize or trivialize the importance of the family in decision making. Parents/caregivers should be viewed as equal partners with equal status in the decision making process. Without such a perspective, parents often become defeated and overwhelmed and may relinquish their authority to make decisions to the teacher or other professionals who educate their child. In order to promote parental involvement, administrators should keep actively involved in programs for students who are deaf or hard of hearing, be sensitive to the needs of families, and work with parents to ensure that they are treated as equal partners in decision making.

Educational Development of the Family

Strategies to increase the educational performance of children who are deaf or hard of hearing should begin with families. Families have the most influence in their children's development and language acquisition. They instill values and set educational expectations. The education of the family is a critical component to overall success of the child, and agencies should give careful attention to meeting this need.

To be involved fully, families must be knowledgeable of the unique characteristics of hearing loss. They should have access to current research, have access to parent organizations, have opportunities to meet with adults who are deaf or hard of hearing, have opportunities to meet other families with children who are deaf or hard of hearing, and be given the opportunity to develop communication proficiency.

Exploration of Linguistic and Cultural Diversity Through Peer and Role Model Involvement

According to Finnegan (1992),

> A person who is 'bicultural' is one who can move freely within and between two different cultures. Biculturalism implies an understanding of the mores, customs, practices, and expectations of members of a cultural group and the ability to adapt to those expectations. 'Bilingualism' involves the ability to function linguistically in two different language communities. (p.1)

According to Humphries (1993),

> Within the United States, to be deaf and an ASL user and also interact and use English well in the hearing society is to be bicultural and bilingual. To be a deaf signed language user and African American, Hispanic, Asian/Pacific Islander, or American Indian in the United States is to be multicultural.(p.3)

Language and culture are strongly linked. Most children who are deaf or hard of hearing are born to parents who are hearing. As a consequence, the transmission of language and culture usually occurs through interaction with nonfamilial members who are deaf or hard of hearing.

The presence of role models who are deaf or hard of hearing in the education system is of utmost importance. Role models expose students to the rich diversity of the Deaf Community and to proficient language models.

There is a continuing need for recruitment of educators who are deaf or hard of hearing. However, some states have credentialing requirements which make it difficult for graduates who are deaf or hard of hearing to receive certificates or licensure. Part of this dilemma is discriminatory testing which has made the teaching profession inaccessible for many qualified individuals who are deaf or hard of hearing.

- Administrators should actively recruit qualified individuals who are deaf or hard of hearing to serve in professional and support capacities within programs for students who are deaf or hard of hearing who meet the requirements established by each state;
- When LEA's do not have access to role models who are deaf or hard of hearing, such as in rural areas, agencies could develop Interaction Plans (Baker-Hawkins & Hawkins, 1994) to define opportunities to associate with peers and role models who are deaf or hard of hearing.
- Individuals responsible for establishing and enforcing requirements and standards for teachers could consider alternative strategies for certification. Examples of alternative strategies include using on the job performance measures and evaluations rather than written measures or requirements to satisfy certification (Paul & Jackson, 1993).

ISSUE V. Education agencies should ensure that there are adequate resources and facilities and that these resources are appropriately managed.

Provision and Maintenance of a Managed Visual Environment

Certain visual characteristics of school rooms need modification in order to maximize a student's access to the events occurring. Poor lighting can obscure or distort facial expressions, lip movements, signs, body movements, and gestures. Lighting considerations are especially necessary when students are utilizing interpreters or are speechreading. Proper lighting as well as non-glare lighting promote visual concentration and reduce eyestrain. Curtains, blinds, and shades are often helpful. Controlled and modified lighting is best. In addition, students benefit from solid and uncluttered backgrounds for ease in speechreading and using sign language. Of equal importance is a visual environment which includes appropriate signage and other visual displays. Appropriate use of these mechanisms assist in the provision of equal access for students who are deaf and hard of hearing to school information and announcements.

Provision and Maintenance of A Managed Auditory Environment

Students learn in many different areas of school buildings such as classrooms, resource rooms, and computer labs. Certain acoustical characteristics of these environments must be modified in order to maximize a students access to the events occurring. Modifications should be written into the IEP.

Reverberation and signal-to-noise ratio are two conditions which significantly influence a student's ability to hear in the classroom. Sound reflects from the floor, walls and ceiling of rooms. This reflection

results in a prolongation of the sound, which is known as reverberation. The amount of reverberant energy in a room depends on the types of materials from which the surface of the floor, walls, and ceiling are made. The ability to understand speech begins to diminish considerably with reverberations longer than .05 seconds; however, many classrooms have an average reverberation time of 1.2 seconds.

Noise, which may emanate from chairs moving, children talking, or building equipment, may be louder than the sound of the teacher's voice. This comparison is referred to as the signal-to-noise ratio. If the teacher is speaking at 60 dB and the noise is at 55 dB, then speech has only a +5 dB signal. The sound level of the teacher's voice must exceed the sound level of the room noise in order for the student with a hearing loss to benefit from verbal instruction. The decision regarding an appropriate signal-to-noise ratio is made individually; however, Hawkins (1988) recommended a signal-to-noise ratio of +15 to +20 dB. In order to reduce signal-to-noise ratio and reverberation, the following steps should be taken:

- Situate classrooms away from the street, playground, boiler room and electrical transformers;
- Situate the child away from noise-producing equipment such as air conditioners. As an alternative, baffle the vents, mount compressors on rubber pads, or insulate the equipment in some way;
- Utilize carpets, acoustic ceiling tiles, rubber seals around the doors, and drapes. Angled room corners cause less reverberation than squared corners. Modify hard surfaced walls with bulletin boards, drapes, cloth, wallpaper, or any other absorbing medium;
- Have the audiologist measure the sound-to-noise ratio and provide advice or modifications; and,
- Where possible situate the child in a classroom with walls and doors rather than in an open environment.

Provision and Maintenance of Amplification Systems

The major options for classroom amplification may be categorized into (1) hearing aid(s) alone, (2) Frequency Modulation (FM) systems used without personal hearing aids, (3) FM systems used with personal hearing aids, and (4) cochlear implants. Cochlear implants are a relatively new technology and are highly controversial. Whether or not to utilize a cochlear implant is a decision made among a physician, his/her team of specialists, and parents. It is a medical procedure and must be regarded by school personnel as such. The decision to implant is not the school's; however, once a child has an implant, it is the school's responsibility to work cooperatively with physician's staff to ensure that appropriate educational follow up is made available. Without appropriate educational follow up, this costly intervention may not prove beneficial.

Some students wear two hearing aids and some students wear only one. For a hearing aid to provide the most benefit, a qualified audiologist must make an appropriate selection. The audiologist should consider hearing aids that are compatible with FM systems or other Assistive Listening Devices (ALDs). Hearing aids must not make sounds uncomfortably loud for the child. If the hearing aid allows loud sounds to become uncomfortable, the child may resist using the hearing aid or may turn the volume control down.

Even with the best selected, most appropriate hearing aid(s), the reverberation and noise levels that are commonly found in school classrooms can severely hinder a child's educational development. Given that few public school classrooms meet requirements for reduction of reverberation, it becomes

BEST COPY AVAILABLE

imperative to explore other options to help overcome inadequate acoustic environments and to improve the child's speech understanding for optimal learning. The child with a hearing loss must sit as closely as possible to the teacher and utilize Assistive Listening Devices (ALDs) which include FM systems and direct audio input when appropriate. With an FM system the teacher wears a wireless lapel microphone and a radio frequency transmitter. The teacher's voice is picked up by the microphone and transmitted to the student who wears an FM receiver. The FM system amplifies the sound and reduces ambient noise, thus reducing the effects of reverberation and poor signal-to-noise ratio.

As mentioned before, all decisions regarding ALDs should be made upon the advice of an audiologist. The audiologist should inform teachers and parents of the components of these systems, as a clear understanding of their function may enhance their use.

In an excellent acoustic environment even the ideal hearing aid arrangement is of little use if it is not working properly. Statistics continue to show a very high malfunction rate (over 50 percent) for hearing aids and FM systems in the schools (Gaeth & Lounsbury, 1966; Zink, 1972). A vigilant system of monitoring and listening checks and an emergency plan for swift repair are necessary in order to keep these amplification systems working properly.

Provisions and Maintenance of Assistive and Instructional Technology

Special equipment such as TDDs/TTYs and amplifiers ensure that students who are deaf or hard of hearing have telephone access. As appropriate, the IEP may include instruction in the use of TDDs/TTYs and relay systems. At least one public phone and one school phone should be equipped with TDDs/TTYs and amplification headsets. Also, state relay system numbers and information should be posted clearly. Other assistive safety, convenience, and instructional devices are enumerated in a later chapter.

Management of Non-Instructional Personnel

In some schools the teacher of students who are deaf or hard of hearing is the only one in the system who has any knowledge of the field. These individuals often are faced with instantly becoming the system's "expert" whether or not they have the skills or experience to warrant the status. Additionally, these individuals have to coordinate students' and other teachers' schedules with those of other noninstructional personnel. Education agencies should take steps to set up proper administrative procedures for monitoring the effectiveness of such noninstructional personnel such as physical therapists, occupational therapists, interpreters, speech/language pathologists, audiologists, transition specialists, and rehabilitation counselors. Teachers should receive guidance and support in working collaboratively with all those individuals who have involvement with the student.

ISSUE VI. The education agency should ensure that there is a process in place to measure and evaluate the outcomes achieved by students and that such knowledge is utilized to improve the overall educational program.

There is a rapidly growing movement to focus education on the basis of educational performance outcomes. Ysseldyke, Thurlow, and Shriner (1992) reported that The National Center on Educational Outcomes (NCEO) defines an outcome as "the result of interactions between individuals and schooling experiences" (p.37). Outcomes include skills, knowledge, and attitudes. There are two basic ways in which schools and

society can assess the outcomes attained by students. The first is to assess the degree to which students are achieving or have achieved specific goals and objectives or standards established nationally, or at the state or local level. The current *Goals 2000: Educate America* effort sweeping the country is such an example (Goals 2000: Educate America Act, P.L. 103-227, signed into law March 31, 1994). The second, less used, approach is to assess the success of graduates. This section encourages education agencies to use both approaches to obtain knowledge about the impact of their education approaches for educating students who are deaf or hard of hearing, and to apply that knowledge toward program improvement.

The *Goals 2000: Educate America* movement has attempted to define goals for all students without addressing the variability among students to attain the goals or the appropriateness of the goals for some students. The following guidelines attempt to balance outcome standards for all students with appropriate outcomes standards for individual students.

Achievement of Outcomes

The expectations for outcomes should be the same for students who are deaf and hard of hearing as for all students. Where a student or group of students can not achieve one or more of the outcomes or where the unique needs of a student require additional outcomes, schools might consider modifications. For example, outcomes for literacy used for hearing students may be different from outcomes for some deaf students. Deaf cultural considerations discussed earlier influence standards for students who are deaf but not for students who are hearing.

Outcomes should guide the curriculum and the instruction that a student receives as well as provide the basis for evaluating the appropriateness of programs. The curriculum and instruction provided to each student who is deaf or hard of hearing should allow a reasonable opportunity for the student to attain the outcomes appropriate for the individual student. The appropriateness of a program and the instructional techniques and methodologies being used to achieve those outcomes should be evaluated on an ongoing basis to ensure that students have the opportunity to achieve the outcomes. Education agencies should ensure that the goals and objectives on each student's IEP assist the students in attaining the educational or enabling outcomes appropriate for the student.

Assessments to measure attainment of outcomes must be fair and unbiased in both content and administrative procedure. Tests and other assessment techniques should be tailored to measure the student's attainment of outcomes. The method by which the assessment is conducted should fairly measure that attainment. For example, instructions must be given in the student's primary language or communication mode. In addition a student's outcomes should be compared objectively to outcomes of both hearing and non-hearing peers.

Follow-up Studies of Outcomes

Education agencies should systematically conduct follow-up studies of their graduates who are deaf or hard of hearing to ascertain the degree to which they are functioning effectively and should use results to improve outcomes appropriately. Education agencies should maintain a data base of graduates who are deaf or hard of hearing for a period of at least 10 years after their graduation. While this is difficult to do because of mobility of graduates during this period, education agencies should undertake reasonable efforts. Both regional and state level agencies should maintain such a data base.

Adminstrators should conduct follow-up surveys and interviews to determine how well the graduates are doing in higher education, employment, living, citizenship, family life, and personal well being. The purpose of such studies should be to find out where graduates are succeeding, where they are having problems, and most importantly, why. This will require general and in-depth studies. Collaborative efforts with institutions of higher education should be helpful.

Application of Assessment Data to Improve Education

Education agencies should ensure that their approaches for educating students who are deaf or hard of hearing are continually improved based on assessment data from their students and graduates. Follow-up studies, described above, should identify areas where outcomes can be improved and curriculum and instruction modified to help future students achieve greater post-school success. Interactions between graduates and educators is a helpful tool for determining areas requiring more focused attention. Administrators should establish an advisory committee including but not limited to individuals who are deaf and hard of hearing, students, graduates, parents, employers, and deaf educators. This committee should provide guidance to the education agency on setting appropriate outcomes assessment, follow-up studies, and the modification of the agency's approaches to educating deaf and hard of hearing students. Parents and advocacy groups should receive reports of data collected.

All students who complete the course of instruction prescribed for them and who achieve the outcomes set forth by the state and the local education agency should be entitled to graduate with the same recognition as any other student.

A focus on outcomes requires an equal focus on enhancing the capability of teachers and other professionals to deliver the curricula and instruction necessary to achieve those outcomes. Education agencies need to analyze carefully the steps needed to ensure that such professionals have access to attaining the knowledge, skills, and resources they need to educate students in a manner that will lead to the attainment of appropriate outcomes.

Summary

The area of education of students who are deaf and hard of hearing presents administrators with many unique challenges. The administrator must be knowledgeable of those issues which require special attention and extra effort. Primary among these is the need for extensive personnel and family development. The issues in this chapter provide an outline which should form a foundation upon which administrators may begin providing appropriate services to students who are deaf and hard of hearing.

References

Baker-Hawkins, S., & Hawkins, L. (1993, December). Critical mass: The Oklahoma plan. *The Endeavor*, 4, 7.

Christensen, K. M. (1993). A multicultural approach to the education of children who are deaf. In K.Christensen & G. Delgado (Eds.), *Multicultural issues in deafness*, White Plains, NY: Longman.

Cohen, O. (1993). Educational needs of African American and Hispanic deaf children and youth. In K. Christensen & G. Delgado (Eds.), *Multicultural issues in deafness*. White Plains, NY: Longman.

Commission on Education of the Deaf (1988). *Toward equality: Education of the deaf*. Washington, DC: United States Government Printing Office.

Finnegan, M. (1992, August). Bilingual/bicultural education. *The Endeavor*, 3, 1-8.

Gaeth, J. H., & Lounsbury, E. (1966). Hearing aids and children in elementary schools. *Journal of Speech and Hearing Disorders*, 31, 283-289.

Hawkins, D. B. (1990). Amplification in the classroom. In J. Davis (Ed.), *Our forgotten children: Hard of hearing pupils in the schools*. Second edition. Bethesda, MD: Self Help for Hard of Hearing People, Inc.

Humphries, T. (1993). Deaf culture and cultures. In K. Christensen & G. Delgado (Eds.), *Multicultural issues in deafness*. White Plains, NY: Longman.

Johnson, J., Mauk, G., Takekawa, K., Simon, P., Sia, C., & Blackwell, P. (1993). Implementing a statewide system of services for infants and toddlers with hearing disabilities. *Seminars in Hearing*, 14(1), 105-119.

Paul, P., & Jackson, D. (1993). *Toward a psychology of deafness: Theoretical and empirical perspectives*. Boston: Allyn & Bacon.

Sheetz, N. A. (1993). *Orientation to deafness*. Boston: Allyn & Bacon.

United States Department of Education (1992). *Goals 2000: Educate America*. Washington, DC: Government Printing Office.

United States Department of Education (1992, October 30). Deaf students education services: Policy guidance. *Federal Register*, 57(211), 49274-49276.

Ysseldyke, J. E., Thurlow, M. L., & Shriner, J. G. (1992). Outcomes are for special educators too. *Teaching Exceptional Children*, 25(1), 36-50.

Zink, G. (1972). Hearing aids children wear: A longitudinal study of performance. *Volta Review*, 74, 41-51.

3

Assessment

One of the most crucial elements in the design and selection of a program or placement for a student who is deaf or hard of hearing is a complete and accurate assessment. Inadequate assessment leads to inaccurate pictures of the student whom the agency will serve. This may in turn lead to an inappropriate placement.

While narrow definitions of what the law requires in an assessment may serve the letter of the law, unless eligibility and placement committees take a rigorous look at each student as an individual, they may not adequately meet the intent of the law. One area where education agencies often violate the intent of the law is in the use of inadequately skilled personnel during the assessment process. Another area is in the lack of constituting an appropriate multidisciplinary team. Committees and placement teams routinely fall into these and other common pitfalls.

The purposes of this chapter are to outline how assessment should proceed, to suggest in some degree of detail what constitutes a comprehensive evaluation, and to identify common pitfalls in assessments of students who are deaf and hard of hearing. To that end, this chapter addresses seven (7) issues. These are:

ISSUE I Educators evaluating babies and young children who are deaf or hard of hearing must place parents in a central role in the process.

ISSUE II Educators should assess carefully each student as an individual.

ISSUE III Individuals involved in administering assessment tools to students who are deaf or hard of hearing need to be proficient in the student's communication mode, style, or language.

ISSUE IV Educators should assess the special language abilities and preferences of each student who has a hearing loss.

ISSUE V Educators should consider the special academic and developmental levels and needs of students who are deaf or hard of hearing.

ISSUE VI Administrators and educators should operationalize a system for monitoring students with hearing losses who are at risk for additional academic failure.

ISSUE VII Administrators should ensure that individuals from multiple disciplines with specific expertise in the area of hearing loss are on the multidisciplinary team.

ISSUE 1. Educators evaluating babies and young children who are deaf or hard of hearing must place parents in a central role in the process.

Few dispute the importance of early detection of hearing loss, yet for all the myriad approaches and models available (Bamford & McSporran, 1993; Josephson & Moore, 1993; Mencher & Mencher, 1993), the average age of identification of an educationally significant hearing loss is still not early enough. Further, the greater the amount of residual hearing a child has, the later the professionals tend to identify the loss (Davis & Wood, 1992). During the optimal years of language development time is often lost and parents often experience much anxiety and frustration. This lack of language development during the early years impacts greatly on future educational achievement. Education agencies must support any and all efforts to identify educationally significant hearing losses at the earliest point possible.

Identification of the hearing loss is the beginning of the assessment process and is the beginning of the long road to the development of appropriate services for children who are deaf and hard of hearing. Evaluators must place parents in a central role during a collaborative effort to evaluate babies and young children. Professionals know their field, but parents know their children and should be involved extensively in this process. Professionals must be sensitive to the personal needs, family background and culture, aspirations, expectations, and lifestyles of families, which vary significantly. In addition, professionals must realize that parents will be making crucial decisions which will affect their child's future achievements. Only the parents can make these decisions regarding educational placement, options, and methodology. The decision they make must be an informed decision. In order for this to occur they must have access to as much unbiased information as possible. Often professionals support parent choice in theory, but when the parent disagrees with that professional, personal biases tend to surface. Parents may feel pressured into the particular philosophy or methodology of the professionals with whom they have early contact (Roush, 1994, in press).

Evaluators must be cognizant of these issues and engage parents in the assessment process as much as the parents choose. In addition professionals must assess the child in relation to that family constellation and environment, must share information, and must respect and expect that what parents choose at one given point in time may change in the future (Roush, 1994, in press; Roush & McWilliam, 1994, in press). Children change, life situations change, and needs change, and professionals must support parents through the changes they make in their choices. Professionals must function as part of a team to use diagnostic information from parents and to share diagnostic information with them so that they may make informed decisions to the best of their abilities and interests (Matkin, 1994, in press).

Assessing babies and young children requires a multidisciplinary team of individuals who have specific expertise in the area of hearing loss. Individuals with training and expertise in the area of early childhood education of children with disabilities, while possessing valuable insights into normal child development and other areas of disability, do not necessarily possess the in-depth knowledge needed to evaluate adequately children who are deaf or hard of hearing. The multidisciplinary team should have as members at least two different individuals with specific knowledge in the area of education of students with hearing loss.

ISSUE 11. Educators should assess carefully each student as an individual.

A careful assessment of each child's academic achievement, language abilities, and needs must be conducted before consideration of placement begins. Evaluators must have experience in applying assessment procedures with this particular group or they may make serious errors in placement (See Placement chapter). Evaluators should then contrast academic and developmental needs with a program's ability to meet those needs and to further the child's scholarly development. As with all students, children with hearing losses should receive their education in environments that are equipped to offer them an academic program of studies which considers their abilities and fosters vigorous development.

Evaluators should use a variety of test instruments and alternative forms of assessment (e.g., portfolios, direct observation, interviews, etc.) in creating a comprehensive and relevant profile of the student in a variety of areas. Furthermore, considering the importance of the assessment process and the complexities involved in the development, selection, administration, and interpretation of assessment instruments, the authors strongly recommend that education agencies use assessment centers (ie., comprehensive state or local assessment centers in public or private school settings or clinics) for this purpose. Agencies involved in the assessment of students who are deaf and hard of hearing must have on staff professionals who are trained to conduct and interpret assessments of students in this population. Including trained professionals in the assessment process who are deaf or hard of hearing themselves will be helpful.

Education agencies should ensure that individuals involved in testing are:

- knowledgeable of the characteristics of the population of students who are deaf or hard of hearing;
- knowledgeable of appropriate instruments and tests;
- proficient in American Sign Language, English based signing systems, fingerspelling, Cued Speech, speechreading and use of auditory input as student being tested may communicate in one or more of these languages or communication modes;
- skilled in performing test-specific tasks associated with assessment;
- skilled in performing milieu specific assessments;
- knowledgeable of assessment for appropriate choice of technologies;
- experienced with students who are deaf or hard of hearing;
- able to choose tools which are non-biased and non-discriminatory;
- able to recognize a child-generated gestural system;
- able to understand the range of particular speech patterns which students who are deaf or hard of hearing use;
- able to make necessary physical modifications to the assessment environment including reduction in visual distraction (e.g., seating/lighting, use of non-glare background, acoustical tiles, drapes, etc.) and assistive listening devices; and,
- able to "flag" assessment items or components that may be invalid.

In addition to the skills described above, evaluators need to consider many factors regarding a student's hearing loss. Individuals involved in testing should understand those factors associated with hearing loss which influence assessment, amplification, and habilitation services. These include:

- *Degree of loss*. Almost all children with hearing losses have some degree of residual hearing (Quigley & Kretschmer, 1982). Once a student uses his residual hearing, then placement teams may make some decisions based on the degree of hearing loss (Bradley-Johnson & Evans, 1991). Knowledge of the implications of aided versus unaided hearing is essential. Vernon (1974) suggested various measures to take depending on the amount of a student's hearing. A "one-size-fits-all" approach to assessment of students who are deaf or hard of hearing will fail to meet their needs.
- *Type of loss*. Students who have conductive and mixed losses benefit differently from their hearing aids than do students who have sensorineural losses. Students with central auditory processing problems present problems similar to students with learning disabilities.
- *Age of onset*. The examiner should know how significantly a loss has affected language in order to use appropriate strategies for interaction.
- *Etiology*. Knowledge of etiology is necessary to alert the examiner to possible cognitive and developmental problems or ongoing health problems so that the student may receive additional and alternative testing.
- *Hearing status of parents*. Children who are deaf or hard of hearing and who have parents who are deaf usually have a higher level of language development than do children of parents who are hearing. This results from early comprehensible language stimulation and the strategies used in the home which foster comfort, acceptance, and communication within the family.

If evaluators do not have the skills listed previously or do not take into consideration the information above, then inaccurate, invalid, or incomplete information may result. According to IDEA, evaluators must use tests and other evaluative materials that:

- are provided and administered in the child's native language or other mode of communication;
- have been validated for the specific purpose for which they are used;
- are administered by trained personnel in conformance with the instructions provided by their producers;
- include those tailored to assess specific areas of educational needs and not merely those which are designated to provide a single general intelligence quotient;
- are selected and administered so as best to ensure that when a test is administered to a child with impaired sensory, manual, or speaking ability, the test results accurately reflect the child's aptitude or achievement level or whatever other factors the test purports to measure, rather than reflecting the child's impaired sensory, manual, linguistic or speaking skills (except where those skills are the factors which the test purports to measure);
- use more than one individual test for determining an educational program for a child;
- are conducted by a multidisciplinary team or groups of persons, including at least one teacher or other specialist with knowledge in the area of suspected disability; and,

- assess all areas related to the suspected disability, including, where appropriate, health, vision, hearing, social and emotional status, general intelligence, academic performance, communicative status, and motor abilities. (Federal Register, 1977, pp. 42496-42497)

Additionally, to accommodate a variety of individual differences, members of the assessment team must be able to modify assessment instruments including:

- providing alternative instructions (demonstration, ASL, gestures, nonvocal test directions);
- modifications of directions;
- practice activities;
- allowance of additional practice;
- provision of additional time;
- provision of additional examples; and,
- use of a qualified interpreter. (Massachusetts, 1986, p.10-11)

One final area of skill which examiners must possess is the ability to determine when to use tests specifically constructed for and normed on students with hearing losses or when to use tests developed for the hearing population. This problem is one of great concern and requires skill and experience. It is never appropriate to use a test which is normed on students who hear as the sole criterion for making a placement decision for a student who cannot hear. Decisions that have a major impact on children such as decisions regarding placement should not be made on the basis of a single developmental assessment or screening device but should consider other relevant information particularly by parents and teachers (Bredekamp, 1987).

Evaluators should gather information which is normed both on students who hear and students who are deaf or hard of hearing in order to get a more accurate picture of present levels. While a student may be significantly below his or her peers who hear, he or she may actually be functioning above other students with similar degrees of hearing loss. Conversely, while the evaluator may expect lower scores on some tests normed on children who can hear, without comparison to norms of children who cannot hear the committee may overlook a potential additional learning problem. Whenever an evaluator uses a test normed on students who can hear, he or she should make sure that this is duly noted in the student's records. Evaluators may use tests normed on students who can hear when trying to determine present levels of performance in skill areas which are not influenced by a hearing loss or when their purpose for testing is to compare the student who is deaf with the student who can hear. For example, when a placement committee is considering placing a child with a hearing loss in the regular classroom, the committee may want to know how the student's academic skills compare to those of the other children in that placement.

ISSUE III. Individuals involved in administering assessment tools to students who are deaf or hard of hearing need to be proficient in the student's communication mode, style, or language.

The 20 year precedent which PL 94-142 set, reinforced by PL 101-476, and validated further by federal policy guidance (Hehir, 1994; U.S. Dept. of Education, 1992) declare clearly and plainly that a student has the right to an evaluation conducted in his or her native language. For hearing students, this is relatively

straightforward, involving the home language. However, individuals uninitiated to the intricacies of this field may assume that the obligation to students who are deaf is over when they secure a person with knowledge of sign language. This perspective overlooks the complexity of the issues which are:

- There are many sign languages and sign codes. Knowledge of one form does not ensure knowledge of the other. There are many dialects in sign just as there are in oral English.
- Knowledge of either ASL or English sign systems does not ensure the interpreter's knowledge of the intricacies of English itself, which is necessary to interpret many of the questions tests ask.
- Qualification and certification to sign are consistent on the national level but are inconsistent from state to state.
- Some young children who sign use family or home-developed sign systems.
- Some children whose parents are hearing begin to use ASL later in life. These students, while not native users of ASL, may in fact be natural users of ASL, and therefore, deserve the same consideration as native users.
- For some students the language or signed system an agency or individual uses may be different from that used by the community in which the child lives.
- Students who are deaf and hard of hearing, whether users of oral English or sign, may have limited vocabularies and grammatical structures which constitute their own individual language form but which may not be evident to an examiner who is unfamiliar with the structure of English.

Individuals with great sensitivity and knowledge both of English and ASL must have a prime role in the assessment process to ensure adequate attention to the individual student's language.

Hazards exist when professionals not skilled in deafness conduct evaluation, selection, administration, and interpretation of tests. The hazards listed below are very real and must receive adequate attention:

- lack of awareness of student's skills;
- assumption that the lack of speech and/or standard English implies a language deficit or lack of intelligence as opposed to a difference in language and/or communication mode;
- problem of misdiagnosis leading to mislabeling, especially when language-based tests are used to measure intelligence;
- lack of knowledge of available instruments normed especially on deaf populations;
- lack of awareness of best assessment instruments and use of appropriate tests;
- potential for inappropriate conclusion regarding student's level of functioning because of limitations of standardized testing;
- inaccurate measurement of intelligence;
- difficulty understanding student responses resulting in underestimation of skills and abilities; and,
- failure to adapt to the student's preferred mode of communication. (Massachusetts, 1989, p. 11)

Whenever an evaluator proficient in the student's primary or preferred language or communication mode is not available, the evaluator should enlist the assistance of a qualified interpreter. At the same time, the use of an interpreter presents an additional variable in the assessment process. Education agencies should make every effort to establish an assessment team composed of individuals with comprehensive

communication skills, including proficiency in ASL and English based communication systems. When it is necessary to use an interpreter, agencies should use only professional interpreters who are certified by the Registry of Interpreters for the Deaf (RID), the National Cued Speech Association (NCSA), or the state certifying agency and who are specifically trained to interpret during assessments.

ISSUE IV. Educators should assess the special language abilities and preferences of each student who has a hearing loss.

Education agencies must assess thoroughly the language abilities and preferences of students who are deaf or hard of hearing. IEP team members should consider this carefully before a placement option is developed. The primary language used by a child with a hearing loss may be English, another spoken language, ASL, a signed system of English, any combination of these,or an idiosyncratic form. IEP team members should consider a program's ability to provide these language forms when determining an appropriate placement. As with all children educated in the United States, English language acquisition and development is essential to the overall success of the student.

Since assessment should be conducted using the student's primary language and preferred communication mode at all times, the assessment will normally begin with a careful, non-ideology based analysis of the student's language and preferred mode of communication. This is no easy task and requires considerable expertise on the part of the evaluator. Below is a partial listing of those factors which evaluators of language ability must assess:

- language used (English, ASL, Spanish, etc.);
- primary and secondary modes used (auditory or visual);
- system of representation of that mode (e.g., SEE 2, Cued Speech, Signed English, regional signs, home invented signs, fingerspelling, speech);
- system student uses receptively versus expressively;
- system student employs in different situations (e.g., at home, in the classroom, in the dormitory, for reading, in the world of commerce such as banks, stores, etc.);
- accuracy and flexibility with which the child uses his language or languages (requires the judgement of a native, adult user of that language or of an individual with a specific linguistic training in that language);
- grammatical, semantic, and social level of skill in understanding and using language or languages;
- underlying auditory and visual processing skills required to support the system or mode (e.g., visual-spatial orientation, auditory sequencing, static versus dynamic processing, etc.); and,
- presence or absence of enhancement of comprehension of signs with and without speechreading and/or auditory cues versus signs only.

ISSUE V. Educators should consider the special academic and developmental levels and needs of students who are deaf or hard of hearing.

An evaluator should consider many components in developing a comprehensive assessment profile. The evaluator must address all requirements under the law which are associated with the assessment of students with disabilities. In addition to these, some special areas require investigation. These areas are above and beyond routine assessment but provide essential insights and require consideration as needed.

The areas below represent a compilation of some very thoughtful efforts at designing appropriate and comprehensive evaluation systems (Bradley-Johnson & Evans, 1991; California Department of Education, 1989; Clark, 1985; Cokely, 1980; Elliott & Powers, 1992; Kelly, Forney, Parker-Fisher, & Jones, 1993; Ling, 1976; Massachusetts Department of Education, 1989; Newby, 1980; Spragins, 1980). The specific tests listed under each area represent possibilities from which to choose. These lists are neither restrictive nor inclusive. Many test are usable only in part, such as the use of only visual or performance subtests of a broader, more comprehensive test. Almost all require some form of modification, which the evaluator must note in the student's record.

History and Background

Family History

Family constellation and developmental history provide important diagnostic insights. These include incidence of hearing loss or learning disorders in the family, communication with family members who are deaf or hard of hearing, attitudes and values with respect to communication philosophy, attitudes and values with respect to Deaf Culture, goals and expectations of family members, social services the family receives, and cultural/linguistic heritage.

Educational History

Information regarding the student's school programs and placements are helpful. These include age of intervention, type of intervention, and process the family went through in getting to the present setting.

Medical History and Present Status

Ophthalmological Examinations. This includes comprehensive visual evaluations performed by an ophthalmologist knowledgeable about testing this population. In addition to nearsightedness and farsightedness, the evaluation should include at minimum assessments for astigmatism, left-right tracking, fluidity in scanning for and locking on to a stimulus, eye teaming, color blindness, and depth perception.

Audiological Examinations. This includes history relevant to cause of hearing loss, age of identification, age of amplification, history of otitis media and/or tube placement, pure-tone air/bone conduction, speech reception threshold, speech discrimination in quiet and noise, impedance battery (middle ear analysis and acoustic reflex), hearing aid evaluation, test of auditory comprehension, auditory/visual discrimination, ABR or otoacoustic emissions results, acoustic analysis of hearing aids/amplification and ear mold check, evaluation for Assistive Listening Device if appropriate, and tolerance for loudness. For purposes of developing appropriate IEP goals and objectives in the areas of listening and speech development, a comparison between listening skills with and without a hearing aid is essential.

Presence of Additional Disabilities. This includes identification of additional disabilities such as attention deficit disorder, seizure disorders, cerebral palsy, or anomalies and pathologies which might be associated with the child's particular etiology.

Developmental and Motor Milestones. This includes age of mastery of locomotor skills, acquisition/loss of teeth, and percentiles of weight and height. In addition, fine and gross motor skills, sports skills, and when appropriate, physical therapy and occupational therapy evaluations provide important insights.

Suggested Instruments or Tests: Information Organizing Checklist for Hearing-Impaired Students (Bradley-Johnson & Evans, 1991); Plan for Assessment and Intervention (Powers,1992); AASD Special Needs Screener (Laughton, 1992).

Psychological Evaluation

Cognitive/Intellectual. Includes intellectual assessment, reasoning skills, long and short term memory, problem solving strategies, ability to and style of learning new tasks, capacity for acquiring content information, and processing testing in students suspected of having additional learning problems such as organization, attention, and impulsivity. Recently researchers have given visual processing problems much attention (Ratner, 1985; Ratner, 1988). It is never appropriate to measure the intelligence of a child with a hearing loss with a language-based test alone. The Stanford-Binet (Terman & Merrill, 1960) and the verbal scales (but not the performance scales) of the Wechsler intelligence tests (Wechsler, 1967, 1974, 1981, 1991) for example, will almost always underestimate the intelligence of a child who is deaf or hard of hearing, and their use is strongly advised against.

Suggested Instruments or Tests: Adaptation of the WISC-R for the Deaf (Ray, 1979); Adaptation of the WPPSI for the Deaf (Ray & Ulissi, 1982); Arthur Adaptation of the Leiter International Performance Scale (Arthur, 1950); CAVAT (Carrow-Woolfolk, 1981); CID Preschool Performance Scale (Geers & Lane, 1984); Coloured Progressive Matrices (Ravens & Summers, 1986); Detroit Tests of Learning Aptitude-2 (Hammill, 1986); Kaufman Assessment Battery for Children (Kaufman & Kaufman, 1983); Leiter International Performance Scale (Leiter, 1969); Nonverbal Test of Cognitive Skills (Johnson & Boyd, 1981); Quick Neurological Screening Test-Revised Edition (Mutti, Sterling, & Spalding, 1978); Smith-Johnson Nonverbal Performance Scale (Smith & Johnson, 1977); Test of Nonverbal Intelligence-2 (Brown, Sherbenou, & Johnsen, 1990); Woodcock-Johnson Psychoeducational Battery-Revised (Woodcock & Johnson, 1989-90).

Psychosocial. Includes identity and self-concept, personality and interaction style, current coping behaviors and emotional functioning, mood and feelings, preferences and concerns, developmentally appropriate social behavior in different contexts (peer/adult, formal/informal, hearing/deaf or hard of hearing), and psychosocial skills necessary for transition including self-determination, self-awareness, and self-advocacy.

Suggested Instruments or Tests: Meadow-Kendall Social/Emotional Assessment Inventory for Deaf Students (Meadow-Orlans, 1983); Adaptive Behavior Inventory (Brown & Leigh, 1986)

Classroom Behaviors

Learning Styles and Preferences. Some students have very specific requirements which promote comfort and ease of learning. Evaluators should consider such issues as lighting preferences, warmth of the room, personal interests, motivation, freedom of movement, ability to self-monitor versus need for closer attention, and preference for working in groups versus as an individual.

Behavior Management. This includes an analysis of students relationships with their peers and teachers and their need for and design of individual behavior plans.

Suggested Instruments or Tests: AASD Special Needs Screener (Laughton, 1992); Attention Deficit Disorders Evaluation Scales-Home and School Versions (McCarney, 1989)

Communication and Language Competencies

Expressive and Receptive Linguistic Skills. This includes, but is not limited to: American Sign Language, signed English systems, English, or other spoken languages.

Listening Skills. This includes awareness, discrimination, localization, sequencing, memory, and figure/ground skills.

Speech Skills. This includes suprasegmental, phonetic and phonologic development.

Speechreading Skills. This includes words, phrases, sentences, figures of speech, and the ability to formulate their meaning from initial perceptions (ie, cognitive closure).

Situational Comprehension. This includes comprehension and ease of comprehension of information in a variety of settings from one-on-one to large group and in different environments from acoustically prepared environments to typical classrooms.

Specific linguistic skills. This includes both receptive and expressive communication, including morphological, phonological, syntactic, semantic, and pragmatic skills, and involves the following (Massachusetts Department of Education, 1986; Quigley, Steinkamp, Power, & Jones, 1982):

- ability to understand/produce appropriate grammatical structures in language
  - word order
  - sentence types (e.g., declarative, interrogative)
  - complex sentences (e.g., relatives, complements, passive voice
  - basic pronominal system
  - question system
- ability to understand/produce basic meaning and extensions of meaning
  - modification of surface order (e.g., noun/verb agreement)
  - derivational morphemes
- ability to understand/produce figurative and creative language (e.g.,idioms, metaphors, similes, jargon, slang)
- ability to understand/produce appropriate discourse and conversation rules

Sign language understanding and use. Includes determination of the language used (e.g., English, ASL, or other), code used (English sign, Cued Speech, fingerspelling), fluency, use in varying situations (e.g., home, school, classroom, with peers), processing skills underlying reception and expression (e.g., visual discrimination, memory, coding, spatial orientation, static processing, dynamic processing), comprehension with and without speechreading, and comprehension with and without auditory cues.

Suggested Instruments or Tests: Carolina Picture Vocabulary Test (Layton & Holmes, 1985); CID Phonetic Inventory (Moog, 1988); CID Picture SPINE (Monsen, Moog, & Geers, 1988); Fundamental Speech Skills Test (Levitt, Youdelman, & Head,1990); Grammatical Analysis of Elicited Language-S (Moog & Geers, 1985); GAEL-C (Moog & Geers, 1980); GAEL-P (Moog, Kozak, & Geers, 1983); Maryland Syntax Evaluation Instrument (White,1975); Phonetic-

Phonologic Speech Evaluation Record (Ling, 1991); Rhode Island Test of Language Structure (Engen & Engen, 1983); Scales of Early Communication Skills (Moog & Geers, 1975); SKI-HI Language Development Scale (Tonelson & Watkins, 1979); Teacher Assessment of Grammatical Structures (Moog & Kozak, 1983); Test of Auditory Comprehension (Trammell, et.al., 1981); Test of Expressive Language Ability (Bunch, 1981); Test of Receptive Language Ability (Bunch, 1981); Test of Syntactic Abilities (1978); Test of Visual Perceptual Abilities-Hearing Impaired Version (Ratner, 1988); Total Communication Receptive Vocabulary Test (Scherer, 1981). Observational notes of native ASL/English sign users.

Present Levels of Academic Performance

Mastery of actual information in age-appropriate subject areas and mastery in the comprehension and production of written language. This includes at least the following:

- academic readiness;
- math computation and application in all contexts (e.g., measurement, money, time, etc.);
- reading comprehension (e.g, words, phrases, sentences, passages, literal/inferential skills);
- style of decoding (i.e., phonetic-acoustic versus visual decoding);
- reading in real world versus reduced context situations;
- reading preferences including amount of time spent reading independently;
- written English literacy including word use, knowledge conveyed, structure, and cohesiveness;
- writing for specific purposes (e.g., messages, discourse, persuasion, narration, etc.); and,
- spelling and penmanship.

Suggested Instruments or Tests: Sequential Assessment of Mathematics Inventory (Reisman & Hutchinson, 1985); Stanford Achievement Test- Hearing Impaired Edition (Psychological Corporation, 1989); Test of Early Reading Ability-Deaf and Hard of Hearing (Reid, Hresko, Hammill, & Wiltshire, 1991); Test of Syntactic Abilities (Quigley, Steinkamp, Power,& Jones, 1978); Test of Written Language-2 (Hammill & Larsen, 1988); Woodcock Reading Mastery Test-R (Woodcock, 1987); Written Language Syntax Test (Berry, 1981).

Adaptive Behaviors in Home and Community

Interviews and Observations. This includes interviews with teachers, parents, and dorm supervisors, which are invaluable in providing a resource for comparison of behaviors across situations. Multiple descriptions of specific behaviors provide insight into the consistency with which and the contingencies around which behaviors occur.

Independent Living, Vocational, Career, and Transition Skills. This includes the ability to perform age-appropriate skills associated with self-care, self-awareness, self-determination, and self-advocacy.

Suggested Instruments or Tests: Adaptive Behavior Inventory (Brown & Leigh, 1986); Reading-Free Vocational Interest Inventory-Revised (Becker, 1988).

ISSUE VI. Administrators and educators should operationalize a system for monitoring students with hearing losses who are at risk for additional academic failure.

There are many reasons for assessing students who have hearing losses (Bradley-Johnson & Evans, 1991; Hammill, 1987). These include: 1) determining whether a student is at risk for academic delays; 2) diagnosing what a student's problems are; 3) identifying what an appropriate intervention plan or program should include; 4) documenting progress; and, 5) conducting research. Standard descriptions

for what each of these areas involve may be adequate for the population of students with normal hearing but require additional explanation regarding the population of students who have hearing losses. One of the most commonly misunderstood areas is the first in the above list.

In regular education programs for children who hear, numerous vehicles are in place to identify support services for children who are at academic risk. For example, students participate in vision, hearing, and speech/language screenings. In addition, many use standardized testing such as the Stanford Achievement Test or the Metropolitan Readiness Test. For the student who has already been identified as having a hearing loss, determination of whether additional learning problems exist which may exacerbate learning challenges is not easy to manage. This problem becomes worse in school systems where students who are deaf or hard of hearing are placed based solely on an initial audiogram, psychological, and academic assessment, then retained in placements based only on three year updates of audiograms and academic performance. Because the statistics on expected outcomes for students with hearing losses report that average outcomes are low (Schildroth & Hotto, 1993), many individuals accept limited progress as the norm and do not follow up with special testing when progress is slow. This occurs not only in public schools, where expertise may be limited, but also in center schools for students who are deaf as well.

Education agencies must determine if a student is at risk for academic delays. Placing a student in a program based on an audiogram and performance on standardized tests given annually is insufficient. There should be in place a mechanism to provide ongoing monitoring of progress, and when progress is less than adequate, additional testing should be administered.

In addition to standardized instruments involvement of the classroom teacher is crucial. During the school year the teacher should maintain an assessment portfolio. The assessment portfolio should be a systematic collection of a child's work which illustrates the child's efforts, achievement, and progress over time. Accumulation of a portfolio involves the child, the parents, and the teacher (Grace & Shores, 1992).

The thorough assessment of a child is very important and should be used to ensure that individual children's needs are met and that each child benefits from educational experiences. The local education agency is responsible for the education of a child regardless of placement and should ensure the provision of appropriate assessment and documentation of the child's progress. The notion that a student is doing well "for a deaf child" does this population a serious disservice.

ISSUE VII. Administrators should ensure that individuals from multiple disciplines with specific expertise in the area of hearing loss are on the multidisciplinary team.

Special problems exist in association with a multidisciplinary team in a public school setting regarding diagnosing problems and determining appropriate educational plans. Often, multidisciplinary teams in public schools, especially in rural settings, are comprised of only one individual who has any knowledge of deafness: that is, either an audiologist or a speech pathologist. Although other individuals may attend, such as a regular education teacher or psychometrist, these individuals may not necessarily be skilled in dealing with hearing losses. Therefore, the team which may be multidisciplinary in spirit may lack multidisciplinary knowledge of the needs of students with hearing losses. No assessment measures should be given, no results interpreted, and no programming decisions should be made by one individual alone. Although the school may meet the letter of the law by including more than one individual on the team, it may violate the intent of the law when only one individual on that team has any expertise in the area of

deafness. In order to ensure that all students with hearing losses receive appropriate screening and placement, the multidisciplinary team must include more than one individual with expertise or appropriate knowledge in the area of hearing loss so that the team in fact represents multiple disciplines of expertise specifically in this field. If more than one individual does not exist within the local education agency, then the agency should contract with an outside individual or agency or should pool resources with other education agencies to ensure that team members represent adequate diversity.

Summary

This chapter presented various issues surrounding psychoeducational assessment of students who are deaf and hard of hearing. Assessment requires additional considerations above and beyond evaluation procedures commonly in practice. For example, when assessing the early education population, it is essential to identify the child as deaf or hard of hearing rather than using a generic term such as developmentally delayed. Generic labels lead to generic services, which are often inappropriate for children with hearing losses. Similarly, standard assessment procedures themselves often lead to inaccurate pictures of needs and inappropriate services. Assessment data are helpful only when they improve a child's educational program.

Assessment procedures should address all domains of learning and development, including social, emotional, physical, and cognitive development, and should rely on multiple sources of information (Bredekamp & Rosegrant, 1992). Unqualified evaluators, inadequately constituted multidisciplinary teams, and ineffective systems for monitoring progress are examples of special problems educators face in assessing this population. Careful consideration of the issues presented in this chapter may provide education agencies with guidance in performing appropriate evaluations.

References

Arthur, G. (1950). *Arthur adaptation of the Leiter International Performance Scale*. Los Angeles: Western Psychological Services.

Bamford, J., & McSporran, E. (1993). Early detection and diagnosis of hearing impairment: A United Kingdom perspective. *The Volta Review*, *95*(5), 19-31.

Becker, R. (1988). *Reading-free Vocational Interest Inventory-Revised*. Columbus, OH: Elbern Publications.

Berry, S. (1981). *Written Language Syntax Test*. Washington, DC: Gallaudet College.

Bradley-Johnson, S., & Evans, L. (1991). *Psychoeducational assessment of hearing-impaired students*. Austin, TX: Pro-ed.

Bredekamp, S. (Ed.)(1987). *Developmentally appropriate practice in early childhood programs serving children from birth through age 8*. Washington, DC: National Association for the Education of Young Children.

Bredekamp, S., & Rosegrant, T. (Eds.)(1992). *Reaching potentials: Appropriate curriculum and assessment for young children*. Washington, DC: National Association for the Education of Young Children.

Brown, L., Sherbenou, R.J., & Johnsen, S.K. (1990). *Test of Nonverbal Intelligence-2*. Austin, TX: Pro-ed.

Bunch, G. (1981a). *Test of Expressive Language Ability*. Weston, Ontario: G.B. Services.

Bunch, G. (1981b). *Test of Receptive Language Ability*. Weston, Ontario: G.B. Services.

California Dept of Education (1986). *Program guidelines for hearing impaired individuals*. Sacramento, CA: California Department of Education. Pub. No. 0-8011-0309-6.

Carrow-Woolfolk, E. (1981). *Carrow Auditory-Visual Abilities Test*. Allen, TX: DLM Teaching Resources.

BEST COPY AVAILABLE

Clark, T. (1985). Psychological and educational evaluations of hearing impaired students. *Self Help for Hard of Hearing*, 12-13.

Cokely, D. (1980). *Assessment workshop: Sign language*. Washington, DC: Gallaudet College.

Davis, A., & Wood, S. (1992). The epidemiology of childhood hearing impairment: Factors relevant to planning of services. *British Journal of Audiology*, 26, 77-90.

Elliott, R., & Powers, A. (1992). *Identification and assessment of hearing impaired students with mild additional disabilities*. Tuscaloosa, AL: The University of Alabama.

Engen, E., & Engen, T. (1983). *Rhode Island Test of Language Structure*. Austin, TX: Pro-ed.

Federal Register (1977, August 23). *Part II, Education of Handicapped Children, Implementation of Part B of the Education of the Handicapped Act*, Vol. 42, 42474-42518.

Geers, A. E., & Lane, H. S. (1984). *CID Preschool Performance Scale*. St. Louis, MO: Central Institute for the Deaf.

Grace, C., & Shores, E. (1992). *The portfolio and its use*. Little Rock, AR: The Southern Association on Children Under Six.

Hammill, D. (1986). *Detroit Test of Learning Aptitude-2*. Austin, TX: Pro-ed.

Hammill, D. (1987). *Assessing the abilities and instructional needs of students*. Austin, TX: Pro-ed.

Hammill, D., & Larsen, S. (1988). *Test of Written Language-2*. Austin, TX: Pro-Ed.

Hehir, R. (1994, February 4). *Guidance on educating deaf students and implementation of the least restrictive environment requirements of Part B of the Individuals with Disabilities Education Act*. Washington, DC: Office of Special Education and Rehabilitative Services.

Johnson, G. R.,& Boyd, H. F. (1981). *Nonverbal Test of Cognitive Skills*. Columbus, OH: Merrill.

Jospehson, J., & Moore, W. (1993). Lowering the age of identification: Oregon's design and preliminary results. *The Volta Review*, 95(5), 33-40.

Kaufman, A. S., & Kaufman, N. L. (1983). *Kaufman Assessment Battery for Children: Interpretive manual*. Circle Pines, MN: American Guidance Service.

Kelly, D., Forney, J., Parker-Fisher, S. & Jones, M. (1993). Evaluating and managing attention deficit disorders in children who are deaf or hard of hearing. *American Annals of the Deaf*, 138 (4), 349-357.

Laughton, J. (1992). Identification of hearing impaired children at risk for mild additional disabilities impacting on learning. In R. Elliott and A. Powers (Eds.), *Identification and assessment of hearing impaired students with additional mild disabilities*. Tuscaloosa, AL: The University of Alabama.

Layton, T. L., & Holmes, D. W. (1985). *Carolina Picture Vocabulary Test*. Austin, TX: Pro-ed.

Leiter, R. G. (1969). *The Leiter International Performance Scale*. Chicago, IL: Stoelting.

Levitt, H., Youdelman, K., & Head, J. (1990). *Fundamental Speech Skills Test*. Englewood, CO: Resource Point, Inc.

Ling, D. (1991). *Phonetic-Phonologic Speech Evaluation Record*. Washington, DC: Alexander Graham Bell Association.

Massachusetts Department of Education (1989). *Guidelines for the education of deaf and hard of hearing students*. Pub. No. 15927-2000-70. Boston.

Matkin, N. (1994, in press). The team evaluation: Strategies for enhancing interdisciplinary collaboration. In J. Roush & N. Matkin (Eds), *Infants and toddlers with hearing loss: Family-centered assessment and intervention*. Maryland: York Press.

McCarney, S. (1989). *The attention deficit disorders evaluation scale - Home version*. Columbia, MO: Hawthorne.

McCarney, S. (1989). *The attention deficit disorders evaluation scale - School version*. Columbia, MO: Hawthorne.

Meadow-Orlans, K. (1983). *Meadow-Kendall Social/Emotional Assessment Inventory for Deaf Students*. Washington, DC: Gallaudet University.

Mencher, L., & Mencher, G. (1993). Identification of infants born with hearing loss: A North American perspective. *The Volta Review*, 95(5), 9-18.

Monsen, R. B., Moog, J. S., & Geers, A. E. (1988). *Central Institute for the Deaf Picture SPINE*. St. Louis, MO: Central Institute for the Deaf.

Moog, J. S. (1988). *Central Institute for the Deaf Phonetic Inventory*. St. Louis, MO: Central Institute for the Deaf.

Moog, J. S., & Geers, A. E. (1975). *Scales of Early Communication Skills*. St. Louis, MO: Central Institute for the Deaf.

Moog, J. S. & Geers, A. E. (1980). *Grammatical Analysis of Elicited Language-Complex Sentence Level*. St. Louis, MO: Central Institute for the Deaf.

Moog, J. S., & Geers, A. E. (1985). *Grammatical Analysis of Elicited Language-Simple Sentence Level*. St. Louis, MO: Central Institute for the Deaf.

Moog, J. S., & Kozak, J. (1983). *Teacher Assessment of Grammatical Structures*. St. Louis, MO: Central Institute for the Deaf.

Moog, J. S., Kozak, J., & Geers, A. E. (1983). *Grammatical Analysis of Elicited Language - Pre-sentence Level*. St. Louis, MO: Central Institute for the Deaf.

Mutti, M., Sterling, H., & Spalding, N. (1978). *Quick Neurological Screening Test - Revised edition*. Novato, CA: Academic Therapy Publications.

Newby, S. (1980). *Assessment workshop: Hearing assessment*. Washington, DC: Gallaudet College.

Powers, A. (1992). Plan for assessment and intervention. In A. Powers & T. Elliott (Eds.), *Assessment profiles of hearing impaired students with mild additional disabilities*. Tuscaloosa, AL: The University of Alabama.

Psychological Corporation (1989). *Stanford Achievement Test - Hearing impaired edition*. San Antonio, TX: Author.

Quigley, S., & Kretschmer, R. (1982). *The education of deaf children*. Austin, TX: Pro-ed.

Quigley, S., Steinkamp, M., Power, D., & Jones, B. (1982). *Test of Syntactic Abilities*. Austin, TX: Pro-ed.

Ratner, V. (1985). Spatial-relationship deficits in deaf children: The effect on communication and classroom performance. *American Annals of the Deaf*, 130, 13-18.

Ratner, V. (1988). New tests for identifying hearing-impaired students with visual perceptual deficits: Relationship between deficits and ability to comprehend sign language. *American Annals of the Deaf*, 133(5), 336-343.

Ratner, V. (1988). *Test of Visual Perceptual Abilities-Revised...Version for Hearing-Impaired*. South Salem, NY: Author.

Raven, J., & Summers, B. (1986). *Manual for the Raven's Progressive Matrices and Vocabulary Scales*. San Antonio, TX: Psychological Corporation.

Ray, S. (1979). *Manual for the Adaptation of the WISC-R for Deaf Children*. Natchitoches, LA: Steven Ray Publishing.

Ray, S., & Ulissi, S. (1982). *An Adaptation of the Wechsler Preschool and Primary Scale of Intelligence for Deaf Children*. Natchitoches, LA: Steven Ray Publishing.

Reisman, F., & Hutchinson, T. (1985). *Sequential Assessment of Mathematics Inventory*. Columbus, OH: Charles E. Merrill.

Reid, K., Hresko, W., Hammill, D., & Wiltshire, S. (1991). *Test of Early Reading Ability - Deaf or Hard of Hearing*. Austin, TX: Pro-Ed.

Roush, J. (1994, in press). Strengthening family-professional relations: Advice from parents. In J. Roush & N. Matkin (Eds), *Infants and toddlers with hearing loss: Family-centered assessment and intervention*. Maryland: York Press.

Roush, J., & McWilliam, R. (1994, in press). Family-centered early intervention: Historical, philosophical, and legislative issues. In J.Roush & N. Matkin (Eds), *Infants and toddlers with hearing loss: Family-centered assessment and intervention*. Maryland: York Press.

Schildroth, A. & Hotto, S. (1993). Annual survey of hearing impaired children and youth: 1991-92 school year. *American Annals of the Deaf*, 138 (2), 163-171.

Scherer, P. (1981). *Total Communication Receptive Vocabulary Test*. Northbrook, IL: Mental Health and Deafness Resources.

Smith, A. J., & Johnson, R. E. (1977). *Manual for the Smith-Johnson Nonverbal Performance Scale*. Los Angeles: Western Psychological Services.

Spragins, A. (1979). Psychological assessment of the school-aged hearing impaired child. In R.K. Mulliken & N. Evans (Eds.), *Assessment of children with low-incidence handicaps*. Stratford, CT: NASP.

Terman, L., & Merrill, M. A. (1960). *Stanford-Binet Intelligence Scale, 3rd revision*. Boston: Houghton-Mifflin.

Tonelson & Watkins, S. (1979). *Ski-HI Language Development Scale*. Logan, UT: Utah State University Press.

Trammell, J., Farrar, C., Francis, J., Schepard, D., Thies, T., Witlen, R., & Faist, L. (1981). *Test of Auditory Comprehension*. North Hollywood, CA: Foreworks.

United States Department of Education (1992). Deaf students education services: Policy guidance. *Federal Register*, 57 (211), October 30, 1992, 49274-49276.

Vernon, M. C. (1974). Deaf and hard-of-hearing. In M. V. Wisland (Ed.), *Psychoeducational diagnosis of exceptional children* (pp.190-212). Springfield, IL: Thomas.

Wechsler, D. (1967). *Wechsler Preschool and Primary Scale of Intelligence*. San Antonio, TX: Psychological Corp.

Wechlser, D. (1974). *Wechsler Intelligence Scale for Children - Revised*. San Antonio, TX: Psychological Corp.

Wechsler, D. (1981). *Wechsler Adult Intelligence Scale - Revised*. San Antonio, TX: Psychological Corp.

Wechsler, D. (1991). *Wechsler Intelligence Scale for Children - III*. San Antonio, TX: Psychological Corp.

White, A. (1975). *Maryland Syntax Evaluation Instrument*. Sanger, TX: Support Systems for the Deaf.

Woodcock, R. & Johnson, M. (1989-90). *Woodcock-Johnson Psychoeducational Battery - Revised*. Allen, TX: DLM Teaching Resources.

4

Placement and Program Options

This chapter presents a number of important issues and items for individuals who are responsible for the development or selection of programs and services for students who are deaf or hard of hearing to consider. It is written to provide an overview of the issues and other aspects of the Individual Education Program (IEP) process which are essential to the development or selection of an appropriate placement. It is not written to advocate consideration of any specific type of placement or program, or any particular instructional philosophy or ideology. Instead, it is written to direct the reader's attention to issues and items that are important and are often overlooked during development of the IEP. The following thirteen (13) issues are discussed:

ISSUE I Educators should consider all of the factors unique to students who are deaf or hard of hearing to ensure that the placement of a student is appropriate and least restrictive.

ISSUE II Educators should consider the student's and parents' preference and choice in all aspects of program options, placement, and IEP development.

ISSUE III Educators should investigate the communication access available to each student in the home, classroom, and overall school environment.

ISSUE IV. Educators should consider the student's degree of hearing loss and the student's ability to use residual hearing.

ISSUE V Educators should be aware of the availability of interpreters and the need to monitor quality of the services they provide.

ISSUE VI Educators should understand the importance of social and emotional development of students who are deaf or hard of hearing.

ISSUE VII Educators should ensure the availability of age appropriate peers who are deaf or hard of hearing.

ISSUE VIII Educators should ensure that the cultural needs of students who are deaf or hard of hearing are met.

ISSUE IX Educators should ensure that students who are deaf or hard of hearing receive appropriate opportunities for direct instruction and direct communication with support personnel.

ISSUE X Educators should be aware of the qualifications and communication competencies that all personnel serving students who are deaf or hard of hearing need.

ISSUE XI Educators should ensure appropriate access to support services for students who are deaf or hard of hearing.

ISSUE XII Educators should ensure the availability of and access to extracurricular offerings for students who are deaf or hard of hearing.

ISSUE XIII Educators should ensure the availability of technology for students who are deaf or hard of hearing.

The complexity of determining a Free, Appropriate, Public Education (FAPE) for students who are deaf or hard of hearing in the Least Restrictive Environment (LRE) is noted in federal policy guidance developed by the Office of Special Education and Rehabilitative Services (OSERS), (Federal Register, October 30, 1992). This was reissued in memorandum form on February 4, 1994 to all chief state school officers by the Office of Special Education Programs (Hehir, 1994).

The policy guidance stated that development of an IEP and determination of a FAPE in the LRE for a student who is deaf or hard of hearing must take into consideration several factors:

- Communication needs and the child's preferred mode of communication;
- Linguistic needs;
- Severity of hearing loss and potential for using residual hearing;
- Academic level; and,
- Social, emotional, and cultural needs, including opportunities for peer interactions and communication. (p. 49275).

The guidance further stated:

> In addition, the particular needs of an individual child may require the consideration of additional factors. For example, the nature and severity of some children's needs will require the consideration of curriculum content and method of curriculum delivery in determining how those needs can be met. Including evaluators who are knowledgeable about these specific factors as part of the multidisciplinary team evaluating the student will help ensure that the deaf student's needs are correctly identified.
>
> Meeting the unique communication and related needs of a student who is deaf is a fundamental part of providing a free and appropriate public education (FAPE) to the child. Any setting, including a regular classroom that prevents a child who is deaf from receiving an appropriate education that meets his or her needs, including communication needs, is not the LRE for that individual child. (p. 49275).

ISSUE I. Educators should consider all of the factors unique to students who are deaf or hard of hearing to ensure that the placement of a student is appropriate and least restrictive.

Students who are deaf or hard of hearing have unique language and communication abilities and needs that educators must carefully consider when determining an appropriate educational placement. For some students who are deaf or hard of hearing an appropriate placement might be a regular education classroom setting with a range of available support services (e.g., audiological, interpreting, notetaking,

sign language instruction, Cued Speech instruction, speech-language services, tutoring, transportation, etc.). For others it might be a special classroom, program, or school where teachers and pupil support professionals are certified and qualified to provide the necessary services. For some a residential school is most appropriate. For still others it may be a combination of these settings.

A placement determination should be based on several factors including:

- the academic and developmental level and needs of the student;
- language abilities of the child;
- the preference of the child and the family;
- the level of communication access in the classroom, home, and overall school environment;
- the degree of the students hearing loss and his or her ability to make use of residual hearing;
- quality of interpreting services and the ability of the child to use them;
- the potential for appropriate social and emotional development of the student;
- the availability of a sufficient number of age-appropriate peers who are deaf or hard of hearing;
- the opportunity for bilingual and bicultural development (meaning Deaf culture and hearing culture);
- opportunities for direct (i.e., without the use of an interpreter or other support personnel) communication with teachers;
- the qualifications and communication competencies of personnel;
- access to pupil personnel services staffed by individuals knowledgeable of the needs of students who are deaf or hard of hearing;
- the availability and accessibility to extracurricular activities; and,
- availability of needed technology.

Each of these areas represents a critical factor in the determination of an appropriate placement. The degree to which each area applies to a given child depends on the unique needs of that child. For that reason, the development of an IEP, including the determination or creation of an appropriate placement, should embrace each of them. Case managers, service coordinators, LEAs, parents, and other professionals involved with the selection or development of an appropriate placement need to exercise considerable caution. They should determine and discuss all of the child's unique needs prior to the development or selection of a program.

ISSUE 11. Educators should consider the student's and parents' preference and choice in all aspects of program options, placement, and IEP development.

Educators should consider and support the placement preference of the student, parents, and family. Parents, families, and involved professionals need to be partners in the development or selection of programming elements and options. A knowledgeable and involved parent is essential to any child's development. Parents may choose to have their child enrolled in a residential program, a day program for children who are deaf or hard of hearing, a center or magnet school within a local or district school system, or in a neighborhood school. Regardless of the placement, parents need to understand and share

in the plan to provide the out-of-school communication and activities that determine so much of what comprises natural childhood development. The opportunity to interact socially with similarly aged peers with whom a child can communicate, both freely and easily, is an important component of natural childhood development. Members of the IEP team must understand clearly the importance of these out-of-school hours. The ability of a program to provide physical (e.g., adjusted transportation schedules) and communication access (e.g., direct access to staff who communicate in the child's preferred language or mode of communication) is a crucial aspect parents must consider.

ISSUE III. Educators should investigate the communication access available to each student in the home, classroom, and overall school environment.

To benefit from educational programming, children need to be able to communicate with their teachers, counselors, support personnel, principals, peers, coaches, and other members of the immediate and extended school family. Children who are deaf or hard of hearing are no exception, and their ability to benefit from available programming is directly related to their degree of communication access. While some students may have enough residual hearing to function with only minimal support, others will require varying degrees of specialized services to ensure they have full, uninhibited access to a school's academic and extracurricular offerings.

Equal access should be the expectation. For example, if a hearing child can spontaneously use the services of a school counselor, that standard of access should also be applicable to children who are deaf or hard of hearing. This may result in the proliferation of interpreting services in environments where support personnel are non-signers; however, equal access is a fundamental right for all students.

For students who are deaf or hard of hearing, especially those individuals who use American Sign Language or an English-based communication system, obstacles to equal access are usually in the form of communication barriers. Uninhibited and direct access to instruction and social interaction within the school environment should be an important consideration in any discussion or review of program options.

ISSUE IV. Educators should consider the student's degree of hearing loss and the student's ability to use residual hearing.

Educators should consider carefully the degree of hearing loss a student has and his/her ability to use it when examining program options. Related factors that need to be considered include the type of hearing loss, age of onset, the ability of the child to utilize residual hearing, level of access to appropriate and well maintained amplification systems (e.g., hearing aids, FM systems, inductive loops, etc.), and most importantly the availability or provision of support services (e.g., audiological). Educators should consider the results of a careful assessment of a students hearing loss [ability] and the programs audiological services. Monitoring of hearing, consultation on amplification and classroom acoustics, and provision of aural rehabilitation are a critical part of services which most children who are hard of hearing or deaf need (ASHA, 1992; see appendix for Guidelines for Audiology Services in the Schools).

ISSUE V. Educators should be aware of the availability of interpreters and the need to monitor quality of the services they provide.

If an assessment of a child's academic needs warrants placement in an environment requiring the use of an interpreter, the availability and quality of services should receive careful consideration. All educational interpreters should be fully certified in accordance with the standards/endorsements of the Association of College Educators: Deaf and Hard of Hearing (ACE-DHH), the National Association of the Deaf (NAD), the Registry of Interpreters of the Deaf (RID), the Convention of American Instructors of the Deaf (CAID), the Conference of Educational Administrators Serving the Deaf (CEASD), and the National Cued Speech Association (NCSA). The roles of educational interpreters are complex and require knowledge and expertise in a variety of contexts including subject matter, interpersonal relationships, and an understanding of the teaching-learning process. Interpreter training programs primarily focus on providing a service to adults who are deaf and hard of hearing (Stuckless, Avery, & Hurwitz, 1989). The profession has not scrutinized or adequately addressed the use of interpreters with adolescents and younger children. Educators should never mistake or misuse interpreters as vehicles for language acquisition. The presence of an interpreter never precludes the need for a teacher certified in working with children who are deaf and hard of hearing. The use of interpreters in academic environments requires careful appraisal, especially with very young children with whom it is rarely effective and potentially harmful.

This section warrants a caveat. Communication through a third party, as in the case of interpreted situations, has the potential to affect adversely group dynamics or interpersonal communications. For example, a student might be hesitant to discuss with a counselor an embarrassing personal problem through a third party. Educators and counselors must make every effort to be sensitive to these possibilities, and where needed, to provide uninhibited communication.

The presence of trained teachers of the children who are deaf does not preclude the need for interpreters. Most teachers of the deaf do not have the training to be interpreters, and only some meet the minimum communication competency standards certifying agencies require. Interpreting is a professional occupation, requiring considerable skill and mandating a sign language, oral, or Cued Speech proficiency level that differs from and, in most cases, exceeds the requirements for teachers of children who are deaf. Consequently, the availability and quality of interpreters, especially in a mainstream environment, should receive careful consideration before determining placement. Further information on educational interpreting may be obtained by reviewing *Educational Interpreting for Deaf Students: Report of the National Task Force on Educational Interpreting* (Stuckless, Avery, & Hurwitz, 1989) and referring to the Appendix for *Model Standards for Certification of Educational Interpreters* (Registry of Interpreters for the Deaf & Council on Education of the Deaf, 1989).

ISSUE VI. Educators should understand the importance of social and emotional development of students who are deaf or hard of hearing.

Children who are deaf or hard of hearing have a right to an education in an environment that enhances their social and emotional development. Their ability to interact with peers, engage in extracurricular activities, participate fully in athletic programs, and engage in developmentally appropriate discussions with teachers and support personnel is crucial to their overall development. Participation in these activities

should not require constant dependence on others (e.g., interpreters) to facilitate communication and interaction. Constant dependence upon others will adversely impact on a child's social and emotional development, and every effort should be made to ensure that a placement site provides sufficient opportunities for active and authentic involvement in school functions independent of support personnel.

ISSUE VII. Educators should ensure the availability of age appropriate peers who are deaf or hard of hearing.

All children deserve an education in an environment where they can communicate and interact with peers in a variety of contexts. Placement committees should consider a site's ability to foster self-development through interaction with other children, especially those who use a common language base and communication modality. This will allow interaction without requiring intervention from an interpreter or other support personnel. All potential placement sites should be examined to determine that there is a sufficient number of language or communication mode peers with whom a child who is deaf or hard of hearing may identify and may develop mutually satisfying social relationships. Such interaction and relationships are needed to foster self-identify and enhance the development of academic, cognitive, and social skills.

Educators should also exercise care when contemplating the placement of children who are deaf or hard of hearing in separate classrooms in a public school building or school for the deaf that do not have an adequate number of children functioning at comparable academic levels. The lack of students using a common language base and communication modality and pursuing similar academic goals, objectives, and content prevents teachers from engaging the individual student in the kinds of discussions needed to ensure adequate development and internalization of relevant concepts. An example of this would be the placement of a child who is deaf or hard of hearing in a generic special education class where none of the other students share the child's language base and communication modality. The nature and diversity of the activities the teacher needs to undertake may significantly inhibit meaningful interaction between the teacher and the student who is deaf or hard of hearing, and though they are in a public setting, often referred to as the least restrictive environment (LRE), this actually constitutes an example of a most restrictive environment. While definite data that would clearly define a critical mass of students are lacking (ie., sufficient number of similarly aged, similarly communicating peers), when several students are engaged with the teacher in related activities on the same level, learning is enhanced. Therefore, educators should use caution when contemplating a programming option that may either directly or indirectly inhibit the child's academic and personal development.

ISSUE VIII. Educators should ensure that the cultural needs of students who are deaf or hard of hearing are met.

Children who are deaf or hard of hearing need exposure to other individuals like themselves, who can provide insight into life and the community from a deaf or hard of hearing individual's perspective. Cultural awareness and identification are critical to the development of a positive self-concept, and programs with students who are deaf or hard of hearing must provide these students with role models who are deaf or hard of hearing. Placement of students in environments where opportunities to interact frequently with professionals and community members who are deaf or hard of hearing, consistent with the families preferences, should receive precedence over environments where such opportunities do not exist. Additionally, educators should judge programs on their ability to provide students with a variety of

life experiences that will enhance the recognition and acceptance of themselves as people who are deaf or hard of hearing. Self-acceptance is a precondition for optimal interaction with the larger community. Consequently, LEA's should assess the quantity and quality of appropriate activities, including specific curriculum components, as part of the determination process and full assessment of each child's unique needs.

ISSUE IX. Educators should ensure that students who are deaf or hard of hearing receive appropriate opportunities for direct instruction and direct communication with support personnel.

Unless a child's unique abilities and needs indicate otherwise, direct instruction from a certified teacher of children who are deaf, who is a competent teacher and adept at the child's language or communication mode, is preferable to the placement of a child in an environment where communication depends upon the use of interpreters and other support personnel. An example of this would include a child with a moderate to severe hearing loss who, with the help of a hearing aid and speechreading, is capable of comprehending a teachers lectures and engaging in group discussions. Such a child may be very comfortable and demonstrate an appropriate level of progress in a regular classroom, without or without additional support services. However, for other children who are deaf or hard of hearing, depending on their unique situation, the intervention of a third person (i.e., interpreter) to facilitate communication has the potential of creating a situation that is not appropriate and perhaps even inherently unequal. As previously stated, communication through a third party, as is the case in interpreted situations, has the potential of adversely affecting group dynamics and impairing the child's social and emotional development. One way to reduce the negative impact of third party communication is to use only fully-certified interpreters. Educators should consider very carefully whether placements requiring the use of interpreters meet the child's academic and other needs.

ISSUE X. Educators should be aware of the qualifications and communication competencies that all personnel serving students who are deaf or hard of hearing need.

All classroom teachers (preschool - grade 12) including those in public school environments, where many students who are deaf or hard of hearing are educated, and other personnel working with students who are deaf should have appropriate qualifications and certifications (see Personnel chapter). They should demonstrate the knowledge and expertise necessary to work with this population. The availability of qualified deaf studies specialists, audiologists, speech and language (English and ASL) therapists, interpreters, and resource teachers is important when considering or developing an appropriate placement option. The quality of personnel is critical to the success of each student's educational program, and the qualifications of personnel should receive careful scrutiny as part of the determination of an appropriate placement. An extensive discussion of personnel qualifications is available in a later chapter.

ISSUE XI. Educators should ensure appropriate access to support services for students who are deaf or hard of hearing.

All students who are deaf or hard of hearing should have access to a school or career counselor, psychologist, teacher's aide, audiologist, interpreter, speech therapist, librarian, school administrators, and all other elements of the school environment. Communication is one factor affecting access, and the presence or procurement of individuals specifically trained to work with the population is another important factor. Programming options should receive appraisal of their ability to provide the student who is deaf or hard of hearing with the full array of services provided to students who are hearing in a public setting. While direct access should be considered the optimal condition, use of interpreters and other means of overcoming obstacles should receive investigation when assessing the viability of a placement option.

ISSUE XII. Educators should ensure the availability of and access to extracurricular offerings for students who are deaf or hard of hearing.

Educators should review the ability of the program to provide for the interaction of students who are deaf or hard of hearing in all of the extracurricular activities available to the general student body. If the program is in a public school setting, educators should consider such questions as these: Will transportation be modified to allow for participating in the full range of activities? Is the access free of intervention, or will the student need support personnel? If so, will personnel be available, as needed? While this area of potential concern is not unique to children who are deaf or hard of hearing, it needs consideration during development and debate of the range of programming options.

ISSUE XIII. Educators should ensure the availability of technology for students who are deaf or hard of hearing.

Students who are deaf and hard of hearing need access to up-to-date technological devices and equipment. Students vary in their technological needs and requirements. Some students may require acoustic enhancements in the classroom and school building, some may require devices which provide visual access to the environment, and some students may require both acoustic and visual technological support. In addition, children who are deaf or hard of hearing with secondary disabilities may require special technological support such as augmentative communication devices.

An appropriate auditory environment is important for students who utilize their residual hearing and should be readily available in the classroom and overall school facility. Appropriate acoustic enhancements include hearing-related technology such as assistive listening devices used alone or in conjunction with a hearing aid such as audio loop systems and FM systems. In addition to acoustic enhancements, schools should provide carpeting in the classroom, sound-treated chambers for audiological testing and screening, and sound-treated rooms for speech therapy.

The visual environment is crucial to most children who are deaf or hard of hearing and there may be a need to alter frequently the seating and technological support to accommodate them. The following technological devices and support should be available to ensure appropriate access:

- Visual signaling and alerting systems such as bells or smoke detectors which activate flashing lights;
- Telecommunication Devices for the Deaf (TDDs & TTYs);
- Televisions with built-in captioning capabilities or attached decoder;
- Captioned films and videotapes;
- LCD information displays which inform students of daily events;
- Real-time captioning;
- Electronic mail and bulletin boards; and,
- Computer software appropriate for students with hearing loss.

Technological devices and equipment must be in proper working condition in order for students to receive benefit. In addition, technology requires evaluation not only for its potential but also for its possible problems. Voice-activated and sound-dependent technology excludes students who are deaf or hard of hearing. Regular classrooms use multi-media computerized instructional software which usually is not captioned and is inappropriate for instruction of students who are deaf or hard of hearing.

Summary

The completed IEP should include identification of an appropriate placement and a usable plan for modification of programming to address the student's unique strengths and needs. The essential purpose is to enhance the student's ability to succeed with the standard curriculum which the state or school district teaches. To ensure that an array of appropriate placement and programming options is available, each state must ensure that a broad continuum of placement and programming options is present. These include residential and/or day placement in center or magnet schools for students who are deaf or hard of hearing, classrooms for students who are deaf or hard of hearing within a public school setting, and part-time or full-time placement in regular education classes with children who are hearing. Additionally, educators should encourage flexibility in programming to allow a combination of placements along the full continuum of potential choices.

One of the main purposes for developing the IEP is to determine an appropriate placement setting for the student, based on an objective analysis of the student's needs. The pre-determination of a placement site, or best practice, whether based on ideology or the preferred use of existing resources, is both inappropriate and potentially harmful to the student. The IEP team has the responsibility to determine a placement and programming that "fits" the child, not to "fit" the child to a particular program or educational philosophy. Educators need to give careful consideration to each of the issues and items presented in this chapter before developing or selecting a placement. The outcome of this process should be the determination of educational programming that is most appropriate for the child, given his/her unique abilities, needs, and strengths.

BEST COPY AVAILABLE

References

American Speech-Language-Hearing Association (1993). Guidelines for audiology services in the schools. *Asha*, 35, (Suppl. 10), pp. 24-32.

Hehir, T. (1994). *Guidance on educating deaf students and implementation of the least restrictive environment requirement of Part B of the Individuals with Disabilities Education Act*. February 4, 1994. Washington, DC: Office of Special Education and Rehabilitative Services.

Model standards for the certification of educational interpreters for deaf students (1989). Presented by The Registry of Interpreters for the Deaf and The Council on Education of the Deaf. Unpublished.

Stuckless, E. R., Avery, J. C., & Hurwitz, T. A. (1989). *Educational interpreting for deaf students*. Rochester, NY: Rochester Institute of Technology.

United States Department of Education (1992). Deaf students education services: Policy guidance. *Federal Register*, 57(211), October 30, 1992, 49274-49276.

5

Personnel

This chapter presents the knowledge and skills needed by primary and ancillary personnel who work with students who are deaf or hard of hearing. The guidelines in this chapter are based on standards and guidelines of professional organizations, guidelines of selected state departments of education, and recommendations of professionals working with individuals who are deaf and hard of hearing.

The following eight (8) issues are discussed:

ISSUE I. Education personnel should have the specialized knowledge, skills and attributes needed to serve students who are deaf and hard of hearing.

ISSUE II. Education personnel should be knowledgeable of how to work with families.

ISSUE III. Education personnel should work collaboratively with others to meet the diverse needs of students with hearing losses.

ISSUE IV. Education personnel should be aware of the need for and the challenges associated with providing ongoing appropriate assessment.

ISSUE V. Education personnel should be proficient in the language and preferred communication mode of their students who are deaf or hard of hearing.

ISSUE VI. Education personnel should reflect the ethnic, cultural, and linguistic backgrounds of the students they serve.

ISSUE VII. Education professionals should be knowledgeable of ways to promote interactions between the school and families in the community.

ISSUE VIII. Education personnel should be aware of processes and procedures for reaching outside the boundaries of their buildings or systems when an appropriate education program is not available.

ISSUE IX. Education personnel should engage in ongoing professional development activities.

ISSUE 1. Education personnel should have the specialized knowledge, skills, and attributes needed to serve students who are deaf or hard of hearing.

The quality of education programs for students who are deaf or hard of hearing depends upon the specialized knowledge, skills and attributes of the personnel. Individuals working with students who are deaf or hard of hearing should meet the certification standards set forth by their states. In addition, education administrators should encourage teachers and other personnel (e.g. counselors, psychologists, etc.) to aspire to the highly respected professional certification standards set by the Council on Education of the Deaf (CED) in 1984. Further, teachers should meet the standards to teach regular education students at the same age and developmental stage at which they are teaching students who have a hearing loss. Where this is not possible or is inconsistent with state requirements, exposure to the content and processes of regular education should be mandatory.

Content area and specialist teachers should master the preparation required to teach in their respective fields in addition to the professional standards set by the professional certifying body for teachers of students who are deaf or hard-of-hearing. Other professionals should meet the standards outlined by their respective professional organizations such as the American Speech-Hearing and Language Association (ASHA), Registry of Interpreters of the Deaf (RID), Council for Exceptional Children (CEC), and the National Cued Speech Association (NCSA). In addition, they should possess the key areas of knowledge and skills specifically related to providing services to students who are deaf and hard of hearing as outlined below.

A draft version of standards, developed through the collaborative efforts of the Council on Education of the Deaf(CED) and the Council for Exceptional Children (CEC) is in the Appendix. This draft was undergoing endorsement and validation processes at the time of this writing.

All individuals, whether teachers, administrators, paraprofessionals, or others, should demonstrate competency in all the areas of knowledge and skills listed below:

Key Areas of Knowledge, Skills, and Professional Responsibilities of School Personnel

- Ability to communicate proficiently with individuals who are deaf and hard of hearing;
- Knowledge of principles of child growth and development with emphasis on age/developmentally appropriate expectations;
- Knowledge of the impact of hearing loss on sociocultural, linguistic, and educational development;
- Knowledge of the interrelationships of family, environment, culture, community, and language;
- Knowledge of Deaf culture, history, literature, and folklore;
- Knowledge of language development and use;
- Knowledge of multicultural interactions and learning characteristics;
- Ability to utilize adults who are deaf and hard of hearing as a resource for students, families, and professional staff;
- Ability to promote high expectations and positive self esteem;

- Knowledge of learning styles and characteristics of learners;
- Ability to use interpreters, transliterators, and foreign language interpreters;
- Ability to work effectively as a member of an interdisciplinary team;
- Ability to develop and implement an individualized program plan (IEP/IFSP) in a given area of expertise;
- Ability to provide consultation and support to parents/caregivers and school personnel;
- Ability to utilize resources essential for implementation of the educational program for students;
- Knowledge of assessment procedures for providing appropriate services;
- Knowledge of adaptations of physical environments to meet auditory/visual needs;
- Knowledge of amplification, assistive listening, and augmentative communication devices;
- Knowledge of assistive devices (TDDs, decoders, vibrotactile devices);
- Ability to implement techniques for facilitating the development of speech and spoken language including but not limited to speechreading and auditory training;
- Knowledge of signing varieties that include features of both English and ASL;
- Knowledge of the Cued Speech system;
- Ability to provide for one's own professional growth;
- Knowledge of federal and state laws and regulations pertaining to the education and provision of services for individuals who are deaf and hard of hearing;
- Knowledge of postsecondary educational and vocational options for students who are deaf and hard of hearing; and,
- Knowledge of resources (local, state, national) for individuals who are deaf and hard of hearing and their families.

ISSUE II. Education personnel should be knowledgeable of how to interact with families.

Research indicates that parent/caregiver-professional partnerships in the educational decision-making process are necessary for effective educational programs (Bronfenbrenner, 1979; Epstein, 1990; Kluwin & Gaustad, 1992; and Turnbull & Turnbull, 1986). Goals for students are accomplished when there is close, compatible, multi-faceted working relationships among the staff, families, and students. Families have the right to be involved in educational programming for their children. Professionals have responsibility for providing families with knowledge, skills, and opportunities for involvement. Education personnel should be skilled in the following:

- Recognizing the family as the most important and knowledgeable resource for the student;
- Demonstrating respect, acceptance, and accommodation for the native or home language, values, and beliefs of the family and the community with which the family identifies;
- Encouraging participation in the choice and use of the communication modality and language of instruction;
- Sharing decision-making regarding issues of assessment, placement, and programming; and,

- Knowledge of information and resources for understanding and supporting the needs of the student and family.

In addition, professionals should provide families and students with:

- Comprehensive information regarding educational and communication options;
- Knowledge and skills to support linguistic, cognitive, social-emotional, academic, and motor development;
- Knowledge and skills to care for personal hearing aids and other amplification or assistive devices;
- Knowledge and skills to utilize an interpreter or transliterator;
- Knowledge and skills to advocate for individual needs;
- Information regarding legislation, rights, and due process procedures;
- Access to information and resources about Deaf culture and communities with which people who are deaf or hard of hearing affiliate; and,
- Access to information and support to strengthen the family's abilities to provide child care and to promote the welfare of family members.

ISSUE III. Education personnel should work collaboratively with others to meet the diverse needs of students with hearing losses.

Comprehensive provision of services requires an interdisciplinary approach to address adequately the academic, cognitive, communicative, linguistic, social-emotional, physical, and developmental needs of students. An interdisciplinary approach demands qualified professionals who are committed to working together among themselves and with families. Team members who will provide primary or supportive services should be chosen based on the needs of the student and the priorities of the family. An interdisciplinary team of professionals and parents/caregivers may participate in all aspects of the program. The interdisciplinary team may include the following personnel:

- Program Coordinator/Supervisor
- Teacher of Students Who Are Deaf and Hard of Hearing
- Regular Education Teacher
- Special Education Teacher
- Parents/Caregivers
- Students
- Educational Interpreter/Transliterator
- Foreign Language Interpreter
- Instructional Assistant
- Speech and Language Specialist
- American Sign Language Specialist
- Manually Coded English Specialist

- Cued Speech Specialist
- Deaf Studies Specialist
- Guidance Counselor
- Career/Vocational Specialist
- Audiologist
- Psychologist
- Social Worker
- Physical Therapist
- Occupational Therapist
- Media/Technology Specialist
- Health Care Professionals

Listed below are sets of knowledge and skills which various personnel must demonstrate in order to serve students with hearing losses appropriately. These lists represent a compilation of information from a number of state's departments of education resource guides and manuals (Massachusetts, 1989; California, 1986), criteria set by professional organizations (Council on Education of the Deaf, 1984; Educational Testing Services, 1993), and the considerable experiences of the writing team.

Program Coordinator/Supervisor

The program coordinator/supervisor should hold the appropriate state credential to teach students who are deaf and hard of hearing as well as the appropriate credential authorizing supervision and/or administration. The coordinator/supervisor has a variety of responsibilities that may include, but are not limited to:

- Coordinating appropriate and qualified personnel to provide direct and indirect services to students who are deaf and hard of hearing (e.g., speech and language specialist, audiologist, interpreter, communication specialists, and so forth);
- Ensuring a full array of services, program options, and resources such as specialized equipment and materials is available to students who are deaf and hard of hearing;
- Developing and implementing identification/screening procedures for students who are deaf and hard of hearing or students suspected of having a hearing loss;
- Ensuring parents/caregivers of students who are deaf and hard of hearing are provided with complete and current information regarding the availability of programs and services for children;
- Ensuring that parents/caregivers of students who are deaf and hard of hearing are included through the IEP or IFSP process in a cooperative and integrated approach to the education of students;
- Ensuring appropriate assessment procedures and personnel are used in the assessment of students who are deaf and hard of hearing;
- Coordinating continuous professional development to ensure the use of best practices in the education of students who are deaf and hard of hearing;
- Providing specialized training to parents, administrators, and support staff regarding the unique needs of students who are deaf and hard of hearing;

- Providing instructional leadership to and supervision of staff members assigned to the program;
- Ensuring quality curriculum and instruction that prepare students for postsecondary education or vocational opportunities are being provided to students who are deaf and hard of hearing;
- Ensuring full access for students who are deaf and hard of hearing to all programs in their educational settings including extracurricular activities;
- Ensuring that language and cultural role models are provided for students;
- Ensuring that follow-up studies of graduates who are deaf or hard of hearing are conducted systematically to ascertain the effectiveness of current programs and to determine how outcome standards may be improved;
- Establishing strong and effective communication with school personnel, parents, students, the deaf community, and local agencies; and,
- Communicating proficiently with individuals who are deaf and hard of hearing in their primary language and preferred communication mode or using an interpreter or transliterator according to the individual's communication mode.

Teacher of Students Who Are Deaf and Hard of Hearing

The teacher of students who are deaf and hard of hearing should have preparation in general education at the appropriate level as well as knowledge of and special preparation in the provision of services for students who are deaf and hard of hearing in order to implement a successful program. Teachers must be able to communicate proficiently with their students. Teachers should meet the standards to teach regular education students at the age and developmental stage at which they are teaching students who have a hearing loss. Standards for professional preparation programs and for certifying teachers and other professional personnel who work with children who are deaf or hard of hearing have been established by the Council on Education of the Deaf (CED, 1984) and are being revised by CEC and CED (Easterbrooks & Radaszewski-Byrne,1994,in press). These teachers have a variety of responsibilities which may include, but are not limited to:

- Utilizing curricula and teaching strategies appropriate to the individual needs of students who are deaf and hard of hearing for promoting all areas of development including language and communication;
- Utilizing current research and strategies for fostering the cognitive, speech, auditory, literacy, and social development in students who are deaf and hard of hearing;
- Communicating proficiently in the primary language (English, ASL) and preferred mode of communication of students (to include the use of various sign systems and/or Cued Speech);
- Assisting parents of students who are deaf and hard of hearing in making informed choices regarding programming options for their children by ensuring parents are provided with complete and current information regarding the availability of programs and services for such students;
- Communicating effectively with families and students regarding resources as well as current research and literature on deafness;
- Coordinating appropriate services for students;

- Being knowledgeable of bilingual/multicultural approaches to the education of students who are deaf and hard of hearing;
- Providing language and cultural role models for students;
- Providing a completely accessible communicative environment;
- Utilizing appropriate assessment procedures and strategies in the areas of language, cognition, social development, and all academic areas;
- Developing and implementing IEPs and IFSPs that address the individual needs of students who are deaf and hard of hearing and their families;
- Monitoring placement of and programming for students who are deaf and hard of hearing to ensure that students are benefitting educationally and that appropriate services are being provided;
- Developing partnerships with families to ensure a cooperative and integrated approach to the education of students;
- Utilizing specialized resource materials and visual, auditory, or tactile aids as appropriate;
- Understanding audiological assessment and its application in implementing appropriate programming;
- Working in cooperation with the audiologist to ensure appropriate provision and use of amplification equipment as well as ensuring that the equipment is properly maintained and functioning appropriately;
- Working in cooperation with the audiologist in planning for auditory learning;
- Working in cooperation with the speech and language therapist and/or communication specialist in planning and implementing communication/language development;
- Assisting in the placement of students into regular education programs as appropriate by coordinating awareness programs and instruction in language and communication to staff and students;
- Providing consultation and/or technical assistance to regular education teachers and other appropriate personnel;
- Collaborating with the deaf studies specialist on implementation of curricular offerings;
- Working in cooperation with school staff to ensure full access for students who are deaf and hard of hearing in all programs in their educational settings including extracurricular activities;
- Coordinating notetaker and interpreter services;
- Working in cooperation with the school counselor to meet individual student's needs; and,
- Assisting school personnel in enhancing students' overall communication skills including knowledge of the use of interpreters/transliterators.

Instructional Assistant

A special education instructional assistant works under the supervision of the teacher of students who are deaf and hard of hearing. This individual assists the teaching staff in implementing the educational program and provides individualized and small group assistance to students as directed by the teacher.

Regular or Special Education Teacher

A regular education or special education teacher who has a student who is deaf or hard of hearing in the classroom requires special preparation prior to the placement of that student, as well as continual support. The responsibilities of the regular education or special education teacher include, but are not limited to:

- Creating an environment of acceptance and inclusion for the student;
- Providing for full access to communication between teacher and student, and student to student, during instructional times;
- Creating an auditory environment by making appropriate acoustic accommodations and by facilitating the use of amplification devices with support from an audiologist;
- Creating a visual environment through the use of resource materials and appropriate equipment with support from a teacher of the deaf or other knowledgeable personnel;
- Providing resources to ensure the student achieves to his/her potential;
- Providing opportunities for the student to participate fully in class;
- Consulting with professionals in the area of deaf education to ensure that the instructional and communicative environment is appropriate for the student;
- Working collaboratively with all professionals and parents to design and deliver instruction as well as to monitor the appropriateness of the placement and the progress of the student; and,
- Communicating proficiently with students who are deaf and hard of hearing in their primary language and preferred communication mode or using an interpreter or transliterator according to the student's communication mode.

Speech-Language Pathologist

The speech-language pathologist should hold the appropriate State licensing credential, meet the requirement for the Certificate of Clinical Competence of the American Speech-Language-Hearing Association, and have course work and supervised experience in working with students who are deaf and hard of hearing. The speech-language pathologist has a variety of responsibilities that may include, but are not limited to:

- Assessing spoken language skills including prerequisites for spoken language development;
- Assessing speech skills including prerequisites for speech development;
- Assessing listening and/or speechreading skills;
- Providing direct instruction in spoken language, speech development, listening and/or speechreading skill development;

- Communicating with students who are deaf and hard of hearing in their primary language and preferred communication mode;
- Working in cooperation with the teacher of students who are deaf and hard of hearing in planning and implementing strategies which foster communication/language development and related academic skills;
- Assisting school personnel in enhancing students' overall communication skills including use of interpreters, communication through print, and other methods of communication the student may use;
- Being knowledgeable in the use of technological devices to support speech and language development;
- Providing consultation to school personnel and parents/caregivers on language development, speech development and listening and/or speechreading skill development; and,
- Communicating proficiently with students who are deaf and hearing in their primary language or preferred communication mode, or using an interpreter or transliterator according to the student's communication mode.

Audiologist

The guidelines for audiologists and recommendations for the provision of appropriate services to deaf and hard of hearing students is described in the document, "Guidelines for Audiology Services in the Schools" (1993). These guidelines are an official statement of the American Speech-Language-Hearing Association (ASHA), and can be found in the Appendix. According to these guidelines, "...comprehensive audiology services to children include prevention, identification, assessment, habilitation, and instructional services, supportive inservices and counseling, and follow-up and monitoring services (p. 31). The guidelines address the following areas:

- Characteristics and needs of children who are deaf or hard of hearing;
- Role and function of audiologists;
- Delivery models for audiological services in school settings; and,
- Preservice training and certification.

Educational Interpreter/Transliterator

Educational interpreters/transliterators facilitate communication between students who are deaf and others, including teachers, other service providers, and peers, within an educational environment, usually a mainstream or quasi-mainstream setting. The educational interpreter/transliterator is a member of the educational team and is relied on by the teacher, the student who is deaf, and hearing peers, to relay information accurately and intelligibly to and from the student who is deaf and others as needed (Stuckless, Avery, & Hurwitz, 1989).

The Registry of Interpreters for the Deaf, the Council on Education of the Deaf, and the National Cued Speech Association have either written or adopted standards which all interpreters must meet. These standards should be sought out and school systems should ensure that they are being utilized by schools.

Psychologist

A psychologist working with students who are deaf and hard of hearing, their families and teachers should hold the appropriate state credential. The psychologist has a variety of responsibilities that may include, but are not limited to:

- Possessing training/background in the psychological and sociological aspects of deafness;
- Possessing training and knowledge to assess cultural and linguistic factors related to deafness and the implications on performance;
- Possessing knowledge of issues related to non-discriminatory assessment, specifically as it pertains to children who are deaf and hard of hearing and who are from racial, ethnic and cultural minorities;
- Selecting, administering, and interpreting verbal and nonverbal assessment instruments appropriate for students who are deaf and hard of hearing;
- Assessing areas of cognitive/intellectual, psychosocial and independent living skills of students who are deaf and hard of hearing;
- Assessing social and emotional aspects of behavior and implications on educational placement and achievement;
- Providing group, individual and family therapy as needed or as appropriate;
- Consulting with school personnel as necessary; and,
- Communicating with students who are deaf and hard of hearing in their primary language or preferred communication mode or using an interpreter or transliterator according to the student's communication mode so that an effective psychologist-client relationship can be developed.

Social Worker

A social worker working with students who are deaf and hard of hearing, their families, and teachers, should hold the appropriate state credential. The social worker has a variety of responsibilities that may include, but are not limited to:

- Providing counseling/therapeutic services to students and their families as needed;
- Conducting home assessment/family social case histories;
- Possessing skills and understanding of family systems;
- Possessing skills and understanding of multilingual/multicultural dynamics;
- Providing clinical consultation to relevant personnel as deemed appropriate;
- Working with families and staff in obtaining needed services, resources and supports for parents/caregivers and students;
- Serving as a liaison between parents/caregivers and other professionals by coordinating and developing community resources in the school and community for students, families, and school personnel; and,

- Communicating with students who are deaf and hard of hearing in their primary language and preferred communication mode, or using an interpreter or transliterator according to the student's communication mode.

Career/Vocational Specialist

The career/vocational specialist should hold the appropriate state credential. This individual has a variety of responsibilities that may include, but are not limited to:

- Designing and implementing a program-wide career education program with an emphasis on "school to work" transition skills within the structure of the existing curriculum to include: career exposure (PS-grade 3), career awareness (grades 4-8), career exploration and career identification (grades 9-12);
- Conducting individual career assessments;
- Interpreting and utilizing career assessment plan results;
- Assisting classroom teachers with the assessment of career awareness, interests, and aptitudes;
- Assisting classroom teachers with making use of results from career assessments at various levels;
- Identifying and obtaining career education materials for use in the classroom;
- Identifying and obtaining materials for staff inservice training;
- Establishing a career education resource center;
- Coordinating job training facilities for classroom and on-the-job training;
- Coordinating job sites for students' observation and on-the-job training;
- Providing outreach service to the community;
- Conducting systematic follow-up surveys of graduates who are deaf and hard of hearing to ascertain the effectiveness of current programs and how outcome standards may be improved; and,
- Communicating with individuals who are deaf and hard of hearing in their primary language and preferred communication mode, or using an interpreter or transliterator according to the individual's communication mode.

ASL Specialist

The ASL Specialist should have specific knowledge/coursework on linguistics and fluency in American Sign Language. This individual has a variety of responsibilities that may include, but are not limited to:

- Communicating proficiently with students who are deaf and hard of hearing in their primary language and preferred communication mode;
- Being knowledgeable about communication/language policy options for schools and programs for students who are deaf and hard of hearing (i.e., Oral, Cued Speech, Total Communication, Bilingual/Bicultural);

- Being knowledgeable about the characteristics of various sign systems used to represent English (e.g., Manually Coded English [MCE]; Rochester Method; Signing Exact English [SEE II]; Signed English);
- Being knowledgeable about the history of American Sign Language, other sign languages, and their structure;
- Being knowledgeable about ASL literature, folklore, and history;
- Understanding the process of acquisition of American Sign Language as a first and second language;
- Being knowledgeable about linguistic research on American Sign Language;
- Being knowledgeable about assessment of American Sign Language;
- Being actively involved in the Deaf Community;
- Being knowledgeable about American Sign Language in the teaching-learning process; and,
- Acting as a resource on American Sign Language for students, families, and other professionals.

Manually Coded English Specialist

The Manually Coded English specialist should hold the appropriate state credential for educational interpreters and use Manually Coded English fluently. This individual has a variety of responsibilities that may include, but are not limited to:

- Communicating proficiently with students who are deaf and hard of hearing in their primary language and preferred communication mode;
- Being able to distinguish between languages (i.e., English, ASL) and communication systems (e.g., Manually Coded English systems, Cued Speech);
- Being knowledgeable about communication policy options for schools and programs for students who are deaf and hard of hearing (i.e., Oral, Cued Speech, Total Communication, Bilingual/Bicultural);
- Being knowledgeable about characteristics of various sign systems used to represent English (e.g. Manually Coded English [MCE]; Rochester Method; Signing Exact English [SEE II]; Signed English);
- Being knowledgeable about the characteristics of Total Communication;
- Being knowledgeable about sign systems and their structures;
- Being knowledgeable about research on sign language and sign systems development and their uses with students who are deaf and hard of hearing;
- Being knowledgeable about assessment of signing ability of students who are deaf and hard of hearing;
- Being familiar with strategies for fostering sign communication development through the use of sign systems in students who are deaf and hard of hearing; and,
- Instructing other team members, school staff and students who interact with students who are deaf in the use of Manually Coded English.

BEST COPY AVAILABLE

Cued Speech Specialist

The Cued Speech Specialist should hold the appropriate state credential for transliterators. This individual has a variety of responsibilities that may include, but are not limited to

- Communicating proficiently with students who are deaf and hard of hearing in their primary language and preferred communication mode;
- Being able to distinguish between languages (i.e., English, ASL) and communication systems (e.g., Manually Coded English systems, Cued Speech);
- Being knowledgeable about communication policy options for schools and programs for students who are deaf and hard of hearing (i.e., Oral, Cued Speech, Total Communication, Bilingual/Bicultural);
- Being knowledgeable about the characteristics of various sign systems used to represent English (e.g., Manually Coded English [MCE]; Rochester Method; Signing Exact English [SEE II]; Signed English);
- Being knowledgeable about the characteristics of Cued Speech and its implementation;
- Being knowledgeable about the linguistic research on Cued Speech and its use by students who are deaf and hard of hearing;
- Being knowledgeable about assessment of receptive and expressive cueing ability in students who are deaf and hard of hearing;
- Being familiar with strategies for fostering the development of spoken language through the use of Cued Speech;
- Being knowledgeable about Cued Speech as a tool for first and second language acquisition and the development of literacy; and,
- Instructing other team members, school staff, and students who interact with students who are deaf and hard of hearing in the use of Cued Speech.

Deaf Studies Specialist

The deaf studies specialist should have extensive experience with the Deaf Community and the languages, cultures and history of people who are deaf. A deaf studies specialist should also have a background in education and be knowledgeable of curriculum and school programs. This individual has a variety of responsibilities that may include, but are not limited to:

- Coordinating/providing instruction and experiential training in deaf culture and communities for students, families, teachers, administrators, support staff, and community agencies;
- Developing an integrated curricular approach to the understanding of the culture, language, and history of people who are deaf;
- Ensuring an inclusive and multicultural perspective on deaf culture and communities;
- Working collaboratively with school and program specialists to ensure the inclusion of deaf culture in all aspects of the school program;

- Serving as a resource person on deaf culture, community resources, and issues;
- Serving as an American Sign Language model for students, families, and professionals; and,
- Communicating proficiently with individuals who are deaf and hard of hearing in their primary language and preferred communication mode.

Guidance Counselor

A guidance counselor working with students who are deaf and hard of hearing, their families, and teachers should hold the appropriate State credential. Guidance counselors should be licensed by the National Board of Certified Counselors and receive professional preparation from programs approved by the Council for Accreditation of Counseling and Related Programs (CACREP). The guidance counselor has a variety of responsibilities that may include, but are not limited to:

- Being knowledgeable in the psychological and sociological aspects of deafness and the implications for family dynamics;
- Being knowledgeable about postsecondary programs for students who are deaf and hard of hearing;
- Being knowledgeable about services available for individuals who are deaf and hard of hearing at community, city, state, and national levels;
- Being knowledgeable about counseling philosophies and theories and their application to clientele who are deaf and hard of hearing;
- Being expert in providing psychosocial, developmental, and coping skill training;
- Communicating proficiently with individuals who are deaf and hard of hearing in their primary language and preferred communication mode, or using an interpreter or transliterator according to the student's communication mode so that an effective counselor-client relationship can be developed;
- Understanding practices and procedures for group guidance and counseling; and,
- Demonstrating skills for group guidance and group counseling.

Physical Therapist

The physical therapist working with students who are deaf and hard of hearing and their teachers should hold the appropriate state credential. The physical therapist has a variety of responsibilities the may include, but are not limited to:

- Assessing the motor skills of students who are deaf and hard of hearing;
- Providing therapy as outlined in the IEP or IFSP; and,
- Communicating with students who are deaf and hard of hearing in their primary language and preferred communication mode, or using an interpreter or transliterator according to the student's communication mode.

Occupational Therapist

An occupational therapist working with students who are deaf and hard of hearing and their teachers should hold the appropriate state credential. The occupational therapist has a variety of responsibilities that may include, but are not limited to:

- Assessing the motor skills of students who are deaf and hard of hearing;
- Providing individual and/or group instruction as outlined in the IEP or IFSP;
- Understanding the motor requirements for sign or Cued Speech production; and,
- Communicating with students who are deaf and hard of hearing in their primarily language and preferred communication mode, or using an interpreter or transliterator according to the student's communication mode.

Media/Technology Specialist

A media/technology specialist working with students who are deaf and hard of hearing should hold the appropriate state credential. This individual has a variety of responsibilities that may include, but are not limited to:

- Being knowledgeable about mediated instructional material sources designed for students with special needs;
- Being knowledgeable about mediated materials and products for students with special needs;
- Being knowledgeable about techniques and strategies for evaluating mediated products for students who are deaf and hard of hearing or who have other special needs; and,
- Communicating proficiently with students who are deaf and hard of hearing in their primary language and preferred communication mode, or using an interpreter or transliterator according to the student's communication mode.

ISSUE IV. Education personnel should be aware of the need for and the challenges associated with providing ongoing, appropriate assessment.

The provision of appropriate services for students who are deaf or hard of hearing requires ongoing, comprehensive assessment of the student's academic, cognitive, communicative, linguistic, social-emotional, and physical developmental needs (Bradley-Johnson, 1991). Assessments and recommendations for programming should be conducted by professionals who are:

1) Knowledgeable of various assessment tools and their validity and reliability when used with students who are deaf and hard of hearing;
2) Skilled in the administration of various assessments with students who are deaf and hard of hearing; and,
3) Able to interpret findings and make recommendations based on the unique needs and characteristics of the student.

ISSUE V. Education personnel should be proficient in the language and preferred communication mode of their students who are deaf and hard of hearing.

Obstacles to learning, social interactions and language acquisition are eliminated when students are educated in environments which provide complete and fully understandable access to communication visually and auditoraly according to the needs of the student. Professionals who work with students who are deaf and hard of hearing should demonstrate competence in the best practices as indicated by their respective professions as well as proficiency in communicating using the primary language and preferred communication mode of the student. In addition, personnel should be able to use effectively educational interpreters/transliterators and/or foreign language interpreters when appropriate.

ISSUE VI. Education personnel should reflect the ethnic, cultural, and linguistic backgrounds of the students they serve.

School administrators and teacher education institutions need to work collaboratively to recruit and prepare professionals who are deaf or hard of hearing and those individuals who are from diverse ethnic, cultural, and linguistic backgrounds, especially those similar to the population in that particular school. Many states are examining equitable testing requirements to prevent discrimination against individuals who are deaf or hard of hearing and are engaging in the certification process. Most notable among the processes looking at equitable testing is that currently being explored by the Educational Testing Services (ETS) (Lytle & Mounty, 1992; Martin & Prickett, 1993).

ISSUE VII. Education personnel should be knowledgeable of ways to promote interactions between the school and families in the community.

Students' families and the community or communities in which the students and their families live form an influential backdrop to the education program. Strong links among the cultures of the school, the home, and the community must be forged. Fundamental to building effective relationships between professionals, families and communities is the development of cross-cultural competence. According to Lynch and Hanson (1992), cross-cultural competence requires an interdisciplinary approach to address adequately the academic, cognitive, communicative, linguistic, social-emotional, physical, and developmental needs of students. Cross-cultural sensitivity includes the knowledge, sensitivity and skills to work effectively with families and students from diverse linguistic and cultural backgrounds. Children who are deaf or hard of hearing often have difficulty acquiring a complete understanding of the values, traditions and accepted behaviors of the culture of their families. Professionals should demonstrate cultural knowledge and sensitivity in curriculum content, instructional approaches, selection of materials and resources, and their interactions with others.

BEST COPY AVAILABLE

ISSUE VIII. Education personnel should be aware of processes and procedures for reaching outside the boundaries of their buildings or systems when an appropriate education program is not available.

If qualified personnel are not available, then schools and school personnel should make every effort to consolidate programs. Sharing of services, regionalizing programs, or using consultants are options which could be considered. This concept is explored in greater detail in the chapter on Supportive Structures and Administration.

ISSUE IX. Education personnel should engage in ongoing professional development activities.

Personnel working with students who are deaf or hard of hearing need to develop additional knowledge and to update their skills to enhance their effectiveness. Continuing education and support is a critical component of the provision of quality services to students who are deaf or hard of hearing and their families. Continuing education and personnel development should be provided to ensure provision of services by personnel whose knowledge and skills meet professional standards and reflect current practices in the field. Effort should be made to assess continuing education needs so that experiences offered are beneficial. This issue is discussed in greater detail in the chapter on Supportive Structures and Administration.

Summary

Education personnel who work with students who are deaf and hard of hearing encompass a wide range of skills, abilities, and talents. Any given child may require a multiplicity of services. Collaboration among service providers, families, and students is a key component to successful provision of services.

References

American Speech-Language-Hearing Association (1993). Guidelines for audiology services in the schools. *Asha*, 35, (Suppl. 10), pp. 24-32.

Bradley-Johnson, S., & Evans, L. (1991). *Psychoeducational assessment of hearing impaired students*. Austin, TX: Pro-Ed.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge: Harvard University Press.

California Department of Education (1986). *Program guidelines for hearing impaired individuals*. Sacramento, CA: California Department of Education. Pub. No. 0-8011-0309-6.

Council on Education of the Deaf (1984). *Standards for professionals involved in the education of hearing impaired children and youth*.

Easterbrooks, S. & Radaszewski-Byrne, M. (1994, in press). The development of knowledge and skill statements for teachers of students who are deaf or hard of hearing. *Journal of Childhood Communication Disorders*, 17(1).

Education Testing Services (1993). *Job analysis of teaching deaf and hard of hearing students*. Princeton, NJ.

Epstein, J. L. (1990). School and family connections: Theory, research, and implications for integrating sociologies of education and family. In D.G. Unger & M.B. Sussman (Eds.), *Families in community settings: Interdisciplinary perspectives*, (pp.99-126). New York: Harworth Press.

Fleetwood, E., & Metzger, M. (1989). *Cued Speech transliterators code of conduct*. Silver Spring, MD: Calliope Press.

Fleetwood, E., Metzger, M., & Williams-Scott, B. (1991). *Cued Speech transliterators national certification examination-Revised*. Silver Spring, MD: TECUnit.

Kluwin, T. N., & Gaustad, M. G. (1992). How family factors influence school achievement. In T. N. Kluwin, D. F. Moores, & M. G. Gaustad (Eds.), *Toward effective public school programs for deaf students*, (pp. 66-82). New York: Teachers College Press.

Luetke-Stahlman, B., & Luckner, J. (1991). *Effectively educating students with hearing impairments*. New York: Longman.

Lytle, R., & Mounty, J. (1992, April). Beyond written English: Assessing competencies of deaf teachers. Paper presented at the American Educational Research Association (AERA), San Francisco, CA.

Lynch, E., & Hanson, M. (Eds.).(1992). *Developing cross-cultural competence: A guide for working with young children and their families*. Baltimore, MD: Paul H. Brookes Publishing Co.

Martin, D., & Prickett, H. (1993, June). National task force on equity and testing deaf professionals. Open meeting. Paper presented at the Convention of American Instructors of the Deaf, Biennial Meeting, Baltimore, MD.

Massachusetts Department of Education (1989). *Guidelines for the education of deaf and hard of hearing students*. Pub. No. 15927-2000-70.

Model guidelines for the certification of educational interpreters for deaf students (1989). The Registry of Interpreters for the Deaf and The Council on Education of the Deaf. Unpublished.

Stuckless, E. R., Avery, T., & Hurwitz, A. (Eds.) (1989). *Report of the task force on educational interpreting*. Rochester, NY: Rochester Institute for the Deaf.

Turnbull, A. P., & Turnbull, H. R. (1986). *Families, professionals, and exceptionality: A special partnership*. Columbus, OH: Merrill.

Glossary

The purpose of this section is to provide the consumers of this document with clear definitions and descriptions of the terms used in the field of the education of children who are deaf and hard of hearing. In addition, the terms represent various related fields such as audiology and speech pathology.

ACOUSTICS: Pertaining to sound, the sense of hearing, or the science of sound. As used in this document the term refers to the qualities of an auditorium, classroom, or other-space that determine how well sounds can be heard. (*American Heritage Dictionary*)

ACOUSTIC ROOM TREATMENT: The use of sound-absorbing materials (such as carpets and acoustical tile) to reduce room noise and reduce the signal-to-noise ratio, thus enhancing the usefulness of hearing aids and other listening device.

ACQUIRED HEARING LOSS: Hearing loss which is not present at birth. Sometimes referred to as adventitious loss.

AIR CONDUCTION: Sound from the air is delivered through the ear canal, the ear drum, and middle ear to the inner ear.

AMBIENT NOISE: Background noise which competes with the main speech signal.

AMERICAN SIGN LANGUAGE (ASL): A visual/gestural language used by Deaf people in the United States and Canada, with semantic, syntactic, morphological and phonological rules which are distinct from English.

AMPLIFICATION: The use of hearing aids and other electronic devices to increase the loudness of sound so that it may be more easily received and understood.

ASSISTIVE LISTENING DEVICES: Any and all types of electronic hearing aids including personal aids, FM systems, infrared, special inputs for telephone or television, and amplified alarms and signals.

AUDIOGRAM: A graph on which a person's ability to hear different pitches (frequencies) at different volumes (intensities) of sound is recorded.

AUDIOLOGICAL ASSESSMENT: A hearing test, comprised of identifying pure-tone thresholds, impedance testing, speech recognition, and speech discrimination measurements, which shows the type and degree of hearing loss.

AUDIOLOGIST: A person who holds a degree in audiology and is a specialist in testing hearing and providing rehabilitation services to persons with hearing loss. The American Speech-Language-Hearing Association is the only organization which certifies audiologists.

AUDITORY/ORAL EDUCATION: The habilitation of listening skills, spoken language, and speechreading skills through early and consistent training, with emphasis on the use of high-quality amplification.

AUDITORY TRAINING: The process of training a person's residual hearing in the recognition, identification, and interpretation of sound.

AUDITORY/VERBAL EDUCATION: The development of speech and verbal language through the maximized use of residual hearing.

AURAL HABILITATION: Training designed to help a person with hearing loss to make productive use of residual hearing. Sometimes includes training in speech-reading.

BICULTURAL: Membership in two cultures, such as deaf culture and hearing culture.

BILINGUAL: Being fluent in two languages. For some deaf children this will include the use of ASL and English.

BILINGUAL-BICULTURAL: Being fluent in two languages (ASL and English) and having membership in both deaf and hearing cultures.

BINAURAL HEARING AIDS: Hearing aids worn in both ears.

BONE CONDUCTION: Sound received through the bones of the skull.

COCHLEAR IMPLANT: An electronic device surgically implanted to stimulate nerve endings in the inner ear (cochlea) in order to receive and process sound and speech.

CONDUCTIVE HEARING LOSS: Impairment of hearing due to the failure of sound waves to reach the inner ear through the normal air conduction channels of the outer and middle ear. In children, conductive loss is typically medically correctable.

CONGENITAL HEARING LOSS: Hearing loss present at birth or associated with the birth process, or which develops in the first few days of life. (*Hearing and Deafness*)

CRITICAL MASS: The term has been borrowed from the field of physics and is intended to mean a sufficient number of children functioning within the same language or communication mode, or age group, to ensure that appropriate opportunities for social and intellectual interaction occur.

CUED SPEECH: A visual representation of the phonemes of spoken language, which uses eight handshapes in four different locations in combination with the natural mouth movements of speech, to make all the sounds of spoken language look different.

DEAF: A hearing impairment which is so severe that the child is impaired in processing linguistic information through hearing, with or without amplification, which adversely effects educational performance. (34 CFR §300.5) A prelingual, primarily sensorineural, bilateral hearing loss of 91 dB or more. (Quigley & Kretschmer, 1982) Means that the person's communication development and current primary communication mode is visually based (either sign language or speech reading). Residual hearing (if any) is a secondary and supplemental sensory avenue; vision is the major channel for receiving information. (Ross, 1990)

DEAF-BLIND: Educationally significant loss of vision and hearing.

DEAF COMMUNITY: The community of people whose primary mode of communication is signed language and who share a common identity, a common culture and a common way of interacting with each other and the hearing community.

DEAF STUDIES: The study of the history, culture, language and literature of the Deaf and the cross cultural relationship between the Deaf and hearing communities.

DECIBEL (dB): The unit of measurement for the loudness of sound. The higher the dB, the louder the sound.

DECODER: An electronic device or computer chip that can display closed captions encoded in television programs, cable television programs and video cassettes. Also called a telecaption adapter.

EAR MOLD: A custom made plastic or vinyl piece which fits into the outer ear to interface with a hearing aid.

EDUCATIONAL INTERPRETER: A person who is able to perform conventional interpreting, together with special skills for working in the educational setting. (National Task Force on Educational Interpreting, 1989)

ENGLISH SIGN SYSTEMS: Sign systems developed for educational purposes, which use manual signs in English word order; sometimes with added affixes which are not present in American Sign Language. Some of the signs are borrowed from American Sign Language and others have been invented to represent elements of English visually. Signing Exact English and Seeing Essential English are two examples of invented systems.

FINGERSPELLING: Representation of the alphabet by finger positions in order to spell out words or longer strings of language.

FM SYSTEM: An assistive listening device that transmits the speaker's voice to an electronic receiver in which the sound is amplified and transmitted to the student's ears via small earphones on the student's personal hearing aids. The device reduces the problem of background noise interference and the problem of distance from the speaker.

FREQUENCY: The number of vibrations per second of a sound. Frequency, expressed in Hertz (Hz), determines the pitch of sound.

GESTURE: Movement of any part of the body to express or emphasize an idea, an emotion, or a function. Not part of a formal communication system.

HARD OF HEARING: A hearing impairment, whether permanent or fluctuating, which adversely affects a child's educational performance, but which is not included under the definition of "deaf" in this section. (34 CFR §300.5) The person's linguistic development is primarily auditorily-based, with vision serving as a secondary and supplemental channel. (Ross, 1990) No satisfactory definition has been drawn between deaf and hard of hearing, other than a behavioral one, because hearing loss exists on a continuum and is influenced by many other external factors. (Moores, 1978)

HEARING AID: An electronic device that conducts and amplifies sound to the ear.

HEARING IMPAIRED: Refers to persons with any degree of hearing loss, from mild to profound, including deaf and hard-of-hearing persons. This term is losing acceptance by deaf persons because of the term "impaired."

HEARING LOSS: Hearing loss was originally defined in medical terms before the development of modern audiology. Today, professionals tend to use the consistent, researched-based terminology of audiology, as well as less-defined educational and cultural descriptions.

Audiometric

The following numerical values are based on the average of the hearing loss at three frequencies 500 Hz, 1,000 Hz, and 2,000 Hz, in the better ear without amplification. The numerical values for the seven categories vary from author to author.

Normal Hearing (-10 dB to 15 dB)
Slight loss (16 dB to 25 dB)
Mild loss (26 dB to 30 dB)
Moderate loss (31 dB to 50 dB)
Moderate/Severe (51 dB to 70 dB)
Severe loss (71 dB to 90 dB)
Profound loss (91 dB or more)

Educational

Any degree of hearing loss may limit full communicative access to educational opportunities in most schools, without appropriate support.

Culturally Deaf

Shared language, values and beliefs of many deaf people.
(See DEAF COMMUNITY) There is a variety of deaf cultures and groups which vary by religion, age, socio-economic level, and education.

HEARING SCREENING: Audiometric testing of the ability to hear selected frequencies at intensities above the threshold of normal hearing. The purpose is to identify individuals with significant hearing loss, with minimal time expenditure, and to refer them for further testing.

IDIOSYNCRATIC LANGUAGE: As applied to the education of children who are deaf, an invented communication form developed within a small group of individuals, e.g. invented signs used in the home prior to formal sign language instruction.

INDIVIDUALIZED EDUCATION PROGRAM (IEP): A team-developed, written program which identifies therapeutic and educational goals and objectives needed to appropriately address the educational needs of a student with disability. An IEP for a deaf child should take into consideration such factors as: (1) Communication needs and the child's and family's preferred mode of communication; (2) Linguistic needs; (3) Severity of hearing loss and potential for using residual hearing; (4) academic level; and (5) Social, emotional needs, including opportunities for peer interactions and communication. (Deaf Students Education Services; Policy Guidance; Notices. *Federal Register*, Vol. 57, No. 211)

INDIVIDUALIZED FAMILY SERVICE PLAN (IFSP): A team-developed, written plan for infants and toddlers which addresses: (1) assessment of strengths and needs and identification of services to meet such needs; (2) assessment of family resources and priorities, and the identification of supports and services necessary to enhance the capacity of the family to meet the developmental needs of the infant or toddler with a disability; and (3) a written individualized family service plan developed by a multidisciplinary team including the parent or guardian. (IDEA)

INFLECTION: A change in the pitch of the speaking voice to add meaning or emphasis to a word or phrase.

INTENSITY: The loudness of a sound, measured in decibels (dB).

INTERPRETER OR TRANSLITERATOR FOR THE DEAF: A person who facilitates communication between hearing and deaf or hard of hearing persons through interpretation into a signed language or American Sign Language, or transliteration of a language into a visual/phonemic code by an oral interpreter or Cued Speech interpreter. The EDUCATIONAL INTERPRETER specializes in classroom interpreting.

INTERPRETATION: The process of conveying a message from one language into another.

INTONATION: The aspect of speech made up of changes in pitch and stress in the voice. The voice may go higher or lower during speech to emphasize certain words or parts of words more than others.

INVENTED ENGLISH SIGN SYSTEMS: Sign systems developed for educational purposes, which use manual signs in English word order with added prefixes and suffixes not present in traditional sign language. Some of the signs are borrowed from American Sign Language and others have been invented to represent elements of English visually. Signed English and Signing Exact English (SEE) are two examples of invented systems.

LEAST RESTRICTIVE ENVIRONMENT: A basic principle of P.L. 101-476 (IDEA) which requires public agencies to establish procedures to ensure that to the maximum extent appropriate, children with disabilities, including children in public or private institutions or other care facilities, are educated with children who are not disabled, and that special classes, separate schooling, or other removal of children with disabilities from the regular educational environment occurs only when the nature or severity of the disability is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily. (Deaf Students Education Services; Policy Guidance; Notices. *Federal Register*, Vol. 57, No. 211)

MAINSTREAMING: The concept that students with disabilities should be integrated with their non-disabled peers to the maximum extent possible, when appropriate to the needs of the student with a disability. Mainstreaming is one point on a continuum of educational options.

MANUALLY CODED ENGLISH: A term applied to a variety of systems that use signs, fingerspelling, or gestures separately or in combinations to represent English manually. (See also fingerspelling, SEE-I, SEE-II, Signed English, PSE)

MIXED HEARING LOSS: A hearing loss with combined sensorineural and conductive elements.

MONAURAL AMPLIFICATION: The use of one hearing aid instead of two.

MORPHEME: A linguistic unit of relatively stable meaning that cannot be divided into smaller meaningful parts. (*American Heritage Dictionary*)

NATIVE LANGUAGE: The language of the home, e.g. the native language of children who are deaf with parents who are deaf is often American Sign Language.

NATURAL LANGUAGE: Language acquired primarily through the least impaired sensory channel.

OPHTHALMOLOGIST: A physician specializing in the treatment of diseases of the eye.

ORAL EDUCATION: A philosophy of teaching deaf and hard of hearing individuals to make efficient use of residual hearing through early use of amplification, to develop speech, and to use speechreading skills.

ORAL INTERPRETER: Communicates the words of a speaker or group of speakers to an individual who is deaf by inaudibly mouthing what is said so that it can be read on the lips.

OTITIS MEDIA: Infection of the middle ear. Children with hearing loss have a higher incidence of otitis media than the rest of the population. Children with recurrent attacks may have fluctuating hearing loss and be somewhat at risk for acquiring permanent hearing loss.

OTOLOGIST: A physician who specializes in medical problems of the ear.

PARENT-INFANT PROGRAM: A program of parent education and infant intervention which stresses early exposure to language and attention to developmental processes which enhance the learning of language. Some programs include early exposure to amplification and the use of hearing aids to stimulate the auditory channel.

PIDGIN SIGN ENGLISH (PSE): A variety of sign language which combines some features of American Sign Language and English. It is sometimes called Contact Signing.

PORTFOLIO ASSESSMENT: A collection of a student's work which demonstrates achievement, efforts, and progress over a period of time.

POST-LINGUAL DEAFNESS: Hearing loss acquired after learning a first language.

PRAGMATICS: The appropriateness of language use to the situation, the speaker, and the audience in regard to logic and validity.

PRELINGUAL DEAFNESS: Refers to hearing loss which is present at birth or shortly thereafter and occurs prior to the acquisition of language.

RESIDUAL HEARING: The amount of usable hearing which a deaf or hard of hearing person has.

REVERBERATION: Prolongation of a sound after the sound-source has ceased. The amount of reverberant energy in a room depends on the absorption coefficient of the surface of the walls, floor and ceiling.

ROCHESTER METHOD: A mode of communication in which spoken English is supplemented with simultaneous fingerspelling of each spoken word.

SIGNED ENGLISH: See Invented English Sign Systems

SIGNING EXACT ENGLISH: See Invented English Sign Systems

SEE-1: Seeing Essential English was designed to use ASL signs plus signs invented to represent both root words and the inflectional system of English.

SEMANTICS: The use in language of meaningful referents, in both word and sentence structures.

SENSORINEURAL HEARING LOSS: A permanent hearing loss caused by failure or damage of auditory fibers in the inner ear (cochlea) and/or damage to the neural system.

SIGNAL TO NOISE RATIO: The difference in the intensities of the speech signal (such as the teacher's voice) and the ambient (background) noise.

SIGNED ENGLISH: The Signed English system was devised as a semantic representation of English for children between the ages of 1 and 6 years. ASL signs are used in English word order with 14 sign markers being added to represent a portion of the inflectional system of English.

SPEECHREADING: The interpretation of lip and mouth movements, facial expressions, gestures, prosodic and melodic aspects of speech, structural characteristics of language, and topical and contextual clues.

SPEECH PERCEPTION: The ability to recognize speech stimuli presented at suprathreshold levels (levels loud enough to be heard).

SPEECH INTELLIGIBILITY: The ability to be understood when using speech.

SPEECH AND LANGUAGE IMPAIRMENT: One or more of the following communication impairments which adversely effects educational performance: articulation impairment, including omissions, substitutions or distortions of sound, persisting beyond the age at which maturation alone might be expected to correct the deviation; voice impairment, including abnormal rate of speaking, speech interruptions, and repetition of sounds, words, phrases, or sentences, which interferes with effective communication; one or more language impairments (phonological, morphological, syntactic, semantic, or pragmatic use of aural/oral language as evidenced by both a spontaneous language sample demonstrating inadequate language functioning, and test results, on not less than two standardized assessment instruments or two subtests designed to determine language functioning, which indicate inappropriate language functioning for the child's age).

SYNTAX: Defines the word classes of language (nouns, verbs, etc.) and the rules for their combination (which words can be combined, and in what order to convey meaning).

SPEECH AND LANGUAGE SPECIALIST: A professional who works with individuals who have specific needs in the area of speech and language.

TELECOMMUNICATION DEVICES FOR DEAF PEOPLE (TDD's): Originally and often still called TTY's. These electronic devices allow deaf and hard of hearing people to communicate by telephone. Also referred to as TT's, text telephones; it's term appears in ADA legislation and regulations.

TOTAL COMMUNICATION: A philosophy of communication which employs a combination of components of oral and manual teaching modes using sign, lipreading, fingerspelling, use of residual hearing, speech, and sometimes Cued Speech.

TRANSLITERATING: The process of facilitating communication between persons who are hearing and persons who are deaf or hard of hearing. In this form of interpretation, the language base remains the same, e.g. the transliteration of spoken English to a signed English system, or to a form which can be read on the lips.

UNILATERAL HEARING LOSS: A mild to profound loss of hearing in one ear. Unilateral loss is now thought to adversely effect the educational process in a significant percentage of students who have it.

References

American Heritage Dictionary of the English Language (1976). Boston, MA: Houghton Mifflin Company.

Davis, H. & Silverman, R. (1970). *Hearing and Deafness.* New York: Holt, Rinehart and Winston, Third Edition.

Massachusetts Board of Education (1989). *GUIDELINES for the Education of Deaf and Hard of Hearing Students.* Boston, MA: The Massachusetts Board of Education, Pub. No. 15927-2000-70.

Ling, D. (1989). *Foundations of Language for Hearing Impaired Children.* Washington, DC: Alexander Graham Bell Association for the Deaf.

Moores, D.F. (1978). *Educating the Deaf: Psychology, Principles, and Practices.* Boston, MA: Houghton Mifflin Co.

National Task Force on Educational Interpreting (1989). *Educational Interpreting for Deaf Students.* (Occasional Paper) Rochester, NY: The National Technical Institute for the Deaf.

Quigley, S. P. and Kretschmer, R. E. (1982). *The Education of Deaf Children.* Baltimore, MD: University Park Press.

Ross, M. (1990). *Hearing-Impaired Children in the Mainstream.* Parkton, MD: The York Press.

United States Department of Education (1992b). Deaf Students Educational Services: Policy Guidance. *Federal Register,* 57(211), October 30, 1992, 49274-49276.

Appendices

Appendix A

CEC/CED Joint Knowledge and Skill Statements For All Beginning Teachers of Students Who Are Deaf or Hard of Hearing

CEC-CED JOINT KNOWLEDGE AND SKILL STATEMENTS FOR ALL BEGINNING TEACHERS OF STUDENTS WHO ARE DEAF OR HARD OF HEARING

PREAMBLE

The Council for Exceptional Children (CEC) and the Council on Education of the Deaf (CED), working together, developed the CEC-CED Joint Knowledge and Skills Document presented below. This document is a set of 66 statements specific to the education of students who are deaf or hard of hearing (D/HH) and is an expansion of the 107 CEC Common Core Knowledge and Skills statements. Both sets of statements are used together and form standards for judging whether individuals have the necessary knowledge and skills to begin teaching (licensure/certification) or whether professional teacher preparation programs have met national standards (accreditation).

The Knowledge and Skills document assumes commitment by Universities and Colleges to a full continuum of options both for students who are D/HH and for teacher preparation programs regarding choice of philosophy under which each program operates. Inherent in the overall process are three basic assumptions:

1) Each teacher preparation program provides a clear philosophy and mission statement which describes its approach to education of learners who are D/HH, including clarification of communication and teaching philosoph(ies) and practice(s).
2) Each program designs foundation courses and experiences consistent with its philosoph(ies) and practice(s) which address diverse needs, both generic and specific, of learners who are D/HH, and
3) Each program is evaluated by professionals with backgrounds similar to that stated in the philosophy/mission statement.

For the purposes of this document the following definitions of terminology have been identified:

1) The term "communication" includes all avenues, verbal and nonverbal, through which we represent information. Communication includes but is not limited to English in all forms, whether signed, spoken, or written, American Sign Language (ASL), other formal languages, and nonverbal communication acts.
2) The term "language" means any and all formal languages, spoken, signed or otherwise represented.
3) The terms "deaf" and "hard of hearing" are considered within a cultural, educational, audiological, and/or medical context consistent with each program's philosophy/mission statement.

I. PHILOSOPHICAL, HISTORICAL, and LEGAL FOUNDATIONS of SPECIAL EDUCATION

KNOWLEDGE AND SKILLS BEYOND COMMON CORE

A. Knowledge

1. Current educational definitions of students with hearing loss, including identification criteria, labeling issues, and current incidence and prevalence figures.

2. Models, theories, and philosophies (e.g., bilingual-bicultural, total communication, oral/aural) that provide the basis for educational practice(s) for students who are Deaf/Hard of Hearing, as consistent with program philosophy.

3. Variations in beliefs, traditions, and values across cultures and within society, and the effect of the relationships among children who are Deaf/Hard of Hearing, their families, and schooling.

4. Issues in definition and identification procedures for individuals who are Deaf/Hard of Hearing (e.g., cultural vs medical perspective).

5. "Rights and responsibilities" (e.g., Deaf Children's Bill of Rights) of parents, students, teachers, and schools as they relate to students who are Deaf/Hard of Hearing.

6. The impact of various educational placement options (from the perspective of the needs of any given child who is Deaf/Hard of Hearing and consistent with program philosophy) with regard to cultural identity, linguistic, academic, and social-emotional development.

B. Skills

7. Apply understanding of theory, philosophy and models of practice to the education of students who are Deaf/Hard of Hearing.

8. Articulate pros and cons of current issues and trends in special education and the field of education of children who are Deaf/Hard of Hearing.

9. Identify the major contributors to the growth and improvement of past-to-present knowledge and practice in the field of education of children who are Deaf/Hard of Hearing.

II. CHARACTERISTICS OF LEARNERS

KNOWLEDGE AND SKILLS BEYOND COMMON CORE

A. Knowledge

10. Communication features (visual, spatial, tactile, and/or auditory) salient to the learner who is Deaf/ Hard of Hearing which are necessary to enhance cognitive, emotional and social development.

11. Research in cognition related to children who are Deaf/Hard of Hearing.

12. Cultural dimensions which being Deaf or Hard of Hearing may add to the life of a child.

13. Various etiologies of hearing loss that can result in additional sensory, motor, and/or learning differences in students who are Deaf/Hard of Hearing.

14. Effects of families and/or primary caregivers on the overall development of the child who is Deaf/Hard of Hearing.

15. Effect that onset of hearing loss, age of identification, and provision of services have on the development of the child who is Deaf/Hard of Hearing.

16. Impact of early comprehensible communication has on the development of the child who is Deaf/ Hard of Hearing.

17. Recognition that being deaf or hard of hearing alone does not necessarily preclude normal academic development, cognitive development, or communication ability.

18. The differences in quality and quantity of incidental language/learning experiences which children who are Deaf/Hard of Hearing may experience.

19. Effects of sensory input on development of language and cognition of children who are Deaf/Hard of Hearing.

B. Skills

(none in addition to core)

III. ASSESSMENT, DIAGNOSIS, and EVALUATION

KNOWLEDGE AND SKILLS BEYOND COMMON CORE

A. Knowledge

20. Specialized terminology used in the assessments of children who are Deaf/Hard of Hearing.

21. Components of an adequate evaluation for eligibility placement and program planning (e.g., interpreters, special tests) decisions for students who are Deaf/Hard of Hearing.

22. Legal provisions, regulations and guidelines regarding unbiased diagnostic assessment, and use of instructional assessment measures with students who are Deaf/Hard of Hearing.

23. Special policies regarding referral and placement procedures (e.g., Federal Policy Guidance, Oct.30, 1993) for students who are Deaf/Hard of Hearing.

B. Skills

24. Administer appropriate assessment tools utilizing the natural/native/preferred language of the student who is Deaf/Hard of Hearing.

25. Gather and analyze communication samples from students who are Deaf/Hard of Hearing, including non-verbal as well as linguistic acts.

26. Use exceptionality-specific assessment instruments (e.g., SAT-HI, TERA-DHH, FSST) appropriate for students who are Deaf/Hard of Hearing.

IV. INSTRUCTIONAL CONTENT and PRACTICE

KNOWLEDGE AND SKILLS BEYOND COMMON CORE

A. Knowledge

27. Sources of specialized materials for students who are Deaf/Hard of Hearing.

28. Components of the non-linguistic and linguistic communication which students who are Deaf/Hard of Hearing use.

29. The procedures and technologies required

to educate students who are Deaf/Hard of Hearing under one or more of the existing modes or philosophies (consistent with program philosophy).

30. Information related to ASL and existing communication modes used by students who are Deaf/Hard of Hearing.

31. Current theories of how languages (e.g., ASL and English) develop both in children who are hearing and who are Deaf/Hard of Hearing.

32. Subject matter and practices used in general education across content areas.

33. Ways to facilitate cognitive and communicative development in students who are Deaf/Hard of Hearing (e.g., visual saliency) consistent with program philosophy.

34. Techniques of stimulation and utilization of residual hearing in students who are Deaf/Hard of Hearing consistent with program philosophy.

35. Research supported instructional strategies and practice for teaching students who are Deaf/Hard of Hearing.

B. Skills

36. Demonstrate proficiency in the language(s) the beginning teacher will use to instruct students who are Deaf/Hard of Hearing.

37. Demonstrate basic characteristics of various existing communication modes used with students who are Deaf/Hard of Hearing.

38. Select, design, produce, and utilize media, materials, and resources required to educate students who are Deaf/Hard of Hearing under one or more of the existing modes or philosophies (e.g., bilingual-bicultural, total communication, aural/oral).

39. Infuse speech skills into academic areas as consistent with mode or philosophy espoused and ability of student who is Deaf/Hard of Hearing.

40. Modify instructional process and classroom environment to meet the physical, cognitive, cultural, and communication needs of the child of the child who is Deaf/Hard of Hearing (e.g., teachers's style, acoustic environment, availability of support services, availability of appropriate technologies).

41. Facilitate independent communication

behavior in children who are Deaf/Hard of Hearing.

42. Apply first and second language teaching strategies (e.g., English through ASL or ESL) appropriate to the needs of the individual student who is Deaf/Hard of Hearing and consistent with program philosophy.

43. Demonstrate ability to modify incidental language experiences to fit the visual and other sensory needs of children who are Deaf/Hard of Hearing.

44. Provide appropriate activities for students who are Deaf/Hard of Hearing to promote literacy in English and/or ASL.

V. PLANNING and MANAGING the TEACHING and LEARNING ENVIRONMRNT

KNOWLEDGE AND SKILLS BEYOND COMMON CORE

A. Knowledge

45. Deaf cultural factors that may influence classroom management of students who are Deaf/Hard of Hearing.

46. Model programs, including career/vocational and transition, that have been effective for students with hearing losses.

B. Skills

47. Manage assistive/augmentative devices appropriate for students who are Deaf/Hard of Hearing in learning environments.

48. Select, adapt, and implement classroom management strategies for students who are Deaf/Hard of Hearing that reflect understanding of each child's cultural needs, including primarily visual Deaf culture where appropriate.

49. Design a classroom environment that maximizes opportunities for visually oriented and/or auditory learning in students who are Deaf/Hard of Hearing.

50. Plan and implement instruction for students who are Deaf/Hard of Hearing and who have multiple disabilities and special needs.

VI. MANAGING STUDENT BEHAVIOR and SOCIAL INTERACTION SKILLS

KNOWLEDGE AND SKILLS BEYOND COMMON CORE

A. Knowledge

51. Processes for establishing ongoing interactions of students who are Deaf/Hard of Hearing with peers and role models who are Deaf/Hard of Hearing.

52. Opportunities for interaction with communities of individuals who are Deaf/Hard of Hearing on a local, state, and national level.

B. Skills

53. Prepare students who are Deaf/Hard of Hearing in the appropriate use of interpreters.

VII. COMMUNICATION and COLLABORATIVE PARTNERSHIPS

KNOWLEDGE AND SKILLS BEYOND COMMON CORE

A. Knowledge

54. Available resources to help parents of children who are Deaf/Hard of Hearing deal with their concerns regarding educational options and communication modes/philosophies for their children.

55. Roles and responsibilities of teachers and support personnel in educational practice for students who are Deaf/Hard of Hearing (e.g.,educational interpreters, tutors, notetakers, etc.).

56. Effects of communication on the development of family relationships and strategies used to facilitate communication in families with children who are Deaf/Hard of Hearing.

57. Services provided by governmental and non-governmental agencies or individuals in the ongoing management of children who are Deaf/Hard of Hearing.

B. Skills

58. Teach students who are Deaf/Hard of Hearing to use support personnel effectively (e.g., educational interpreters, tutors, notetakers, etc.).

59. Facilitate communication between the child who is Deaf/Hard of Hearing and his family/caregivers.

60. Facilitate coordination of support personnel (e.g., interpreters) to meet the diverse communication needs of the student who is Deaf/Hard of Hearing and/or primary caregivers.

VIII. Professionalism and Ethical Practices

KNOWLEDGE AND SKILLS BEYOND COMMON CORE

A. Knowledge

61. Ability to seek out process for acquiring the needed skills in modes/philosophies of education of students who are Deaf/Hard of Hearing in which an individual was not prepared.

62. Consumer and professional organizations, publications, and journals relevant to the field of education of students who are Deaf/Hard of Hearing.

B. Skills

63. Actively seek interaction with adults in the Deaf community to maintain/improve ASL, English signs, or cues as consistent with program philosophy.

64. Demonstrate ability to interact with a variety of individuals who are Deaf/Hard of Hearing on an adult-to-adult level.

65. Provide families with the knowledge and skills to make appropriate choices needed to enhance development and transition of their children who are Deaf/Hard of Hearing.

66. Participate in the activites of professional organizations relevant to the education of students who are Deaf/Hard of Hearing.

Appendix B

Model Standards for the Certification of Educational Interpreters for Deaf Students and Suggested Options for Routes to Certification

MODEL STANDARDS FOR THE CERTIFICATION OF EDUCATIONAL INTERPRETERS FOR DEAF STUDENTS

and

SUGGESTED OPTIONS FOR ROUTES TO CERTIFICATION

Presented by

THE REGISTRY OF
INTERPRETERS FOR THE DEAF
and
THE COUNCIL ON EDUCATION OF THE DEAF

PREFACE

Educational Interpreting is a profession that has grown in large part due to legislation. Public Law 94-142 made it possible, through the use of interpreters, for deaf and hard of hearing children to attend their local public schools with hearing peers. As a result, educational programs have become one of the largest employers of interpreters in the United States. As the field evolved, it has become a hybrid of education and interpreting. Often, interpreters in elementary and secondary schools found themselves without guidance since the primary emphasis in the field of interpretation had traditionally focused on working with adults. In 1985, the National Task Force on Educational Interpreting was formed to develop guidelines for interpreters, teachers, administrators and consumers of interpreting services in the educational setting. The goal of the Task Force was to help educational interpreting become an increasingly valuable service in the education of mainstreamed deaf and hard of hearing students and an increasingly satisfying and rewarding career for those who provide the service. The Task Force developed a document reporting on the role and responsibilities of educational interpreters. This led to the formation of the RID/CED Ad Hoc Committee on Educational Interpreter Standards. This document is a result of that Committee's work.

THE STANDARDS

This document proposes model standards for the certification of Educational Interpreters working in kindergarten through twelfth grade.

Five areas of competency, and an Observation/Practicum, were developed:

I. General Education
II. Foundations in Education and Deafness
III. Foundations in Interpretation
IV. Educational Interpreting
V. Communication and Educational Interpreting Skills

Within each area the listed competencies are not prioritized. An Observation/Practicum provides direct experience in integrating the knowledge and skills taught in the competency areas.

The committee focused on the findings of the National Task Force and feedback from educators, educational interpreters, and interpreter trainers across the country. The committee recognizes that the provision of an interpreter, no matter how well qualified, does not in itself ensure complete access of a deaf student to the mainstream experience. It is the function of a student's Individual Education Plan to spell out other factors contributing to a successful mainstream experience for that student. The committee does feel strongly that if an educational interpreter is required by the child's IEP, the interpreter must be prepared to function effectively in the educational setting.

These model standards are presented for your consideration.

COMPETENCIES FOR CERTIFICATION OF EDUCATIONAL INTERPRETERS

presented by

THE REGISTRY OF INTERPRTERS FOR THE DEAF
THE COUNCIL ON EDUCATION OF THE DEAF

I. General Education

It is expected that the Educational Interpreter will be able to provide services in a wide variety of content areas within the school's overall curriculum. In order to have the flexibility to provide educational interpreting services K-12, he or she must be able to draw on a broad spectrum of knowledge in the humanities, the sciences, and the arts, often collectively called general studies. The Educational Interpreter must have basic knowledge in the following:

A. English: Vocabulary, spelling, grammar, reading, writing, and literature.

B. Humanities: Salient features of the humanities, philosophy, and the arts; general understanding of major principles and/or events and significant figures.

C. Physical Sciences: Principles and common terms used in the physical sciences including mathematics, physics, biology, and chemistry and in computer science.

D. Social Sciences: Major principles and/or events and significant figures in history, psychology, linguistics, sociology, and anthropology, with particular attention to human development and language development.

E. Public Speaking: Public speaking and acting techniques, use of appropriate voice presentation techniques, ability to convey information through facial expressions, body postures, pantomime.

F. Interpersonal Skills: Interpersonal communication techniques and skills, including the ability to interact effectively with peers, supervisors, children, and parents.

II. Foundations in Education and Deafness

Educational interpreters work with a variety of deaf and hard of hearing students of different ages and grade levels. To help ensure the successful functioning of these students in the mainstream, the role of the educational interpreter requires knowledge of, but not necessarily skill in, the following:

A. Communication: Group dynamics and human relations, cross cultural communication issues including deaf-hearing and multiethnic/multicultural, communication modalities used by deaf individuals, including: American Sign Language, Manually Coded English, Pidgin Sign English, Oral, speech, speechreading, and Cued Speech; other communication techniques used with hard of hearing, deaf-blind, and deaf multihandicapped individuals.

B. Hearing impairment: hearing impairment in children and adults, knowledge of definitions, etiologies, demographics; psychological, social, and cultural conditions; audiological assessment, use and maintenance of assistive listening devices, technical communication aids such as TDDs, decoders, signalling systems, etc.

C. Deaf and hard of hearing people in society: deafness and the community, history, culture, community, family, and work; community organizations and agencies of and/or serving deaf and hard of hearing persons, their philosophies, relationships and services.

D. Human development: Psychological, social and language maturation stages, learning and its facilitation; age appropriate behavior patterns; first and second language acquisition; relevance of childhood deafness to developmental processes.

E. Education: history, philosophies, organizational structures, issues and trends at all educational levels; educational psychology.

F. Special Education: The variety of handicapping conditions and special needs and services relative to education; public laws, policies, multidisciplinary team processes, and attitudes relating to handicapped and other minority students; parenting the exceptional child.

G. Education of deaf and hard of hearing students: History, philosophies and techniques in educating deaf and hard of hearing students in various types of programs; educational placement alternatives and demographics; special considerations for placement and services to deaf students with additional handicaps; parenting a deaf or hard of hearing child; laws, regulations and policies affecting the education and placement of students; support services available to deaf students in regular and special schools; professional and parent organizations.

H. Major curriculum areas: concepts and vocabulary used throughout the elementary and secondary level in academic, vocational and extracurricular areas.

I. Interpersonal relations: Strategies for professionalism in attitudes, judgment, and behavior; flexibility and diplomacy; working with administrators, colleagues, students, parents, and others; conflict resolution.

III. Foundations In Interpretation

All interpreting requires a unique mental process. The educational interpreter should have a foundation in interpretation before beginning the study of educational interpreting. The interpreter must have knowledge of theory, psycholinguistics, and ethical behavior both in general and specific to the educational setting.

The educational interpreter will have basic knowledge of the process of interpreting, and interpreting for deaf persons. in the following areas:

A. Theory: Theory and psycholinguistic processes involved in interpretation.

B. Interpreting: history, settings, organizations, and certification processes; interpreting as a career.

C. Ethics: Codes of ethics and their applications to various settings.

D. Research, trends, and issues: Interpretation; interpreting for deaf people.

E. Physical considerations: Physical health and stress management, techniques for reducing visual and physical fatigue and overload of both student and interpreter.

F. Techniques: Settings and situations, including group interpreting, one-to-one interpreting, telephone interpreting, interpreting to media, prioritizing input from multiple speakers and environmental noises for interpretation.

IV. Educational Interpreting

The role and function of the educational interpreter is unique to the educational setting. This specialized role calls for the integration of a number of different responsibilities. As a member of an educational team, the educational interpreter needs to be able to work cooperatively with numerous other persons and contribute specialized knowledge.

A. Role and responsibilities: variety of roles at different age/grade levels and in different educational settings, including attention, comprehension, behavior, vocabulary clarification, and responsibilities under the Individual Education Plan.

B. Multidisciplinary team: Understand role and responsibilities of members of the multidisciplinary team and function of educational interpreter as a member of the team, including development, implementation, and revision of the Individual Education Plan.

C. Ethical codes and standards: as applied to educational interpreting, including confidentiality, judging when to use verbatim sign-to-voice; professional behavior.

D. Student development: Ecouraging student independence, including use of communication skills.

E. Educational support services: tutoring techniques and responsibilities; notetaking; use of visuals; specialized seating.

F. Orientation to deafness: information about teaching sign language and about deafness for the layperson; referral sources on general topics relating to deafness; when, how, and to whom to make referrals; promoting an expanded communication environment for the deaf or hard of hearing student; fostering student participation in activities.

G. Communication comprehension: monitoring student understanding in class using the communication method designated by the IEP.

H. Professional development: Planning a program of professional development for improving job-related skills.

V. Communication and Educational Interpreting Skills

Educational interpreters serve students with a variety of communication skills and styles. The skills of the educational interpreter are vital to the success of these students in mainstream settings. Therefore, the educational interpreter must demonstrate communication, interpretation and/or transliteration skills in the following areas:

A. Receptive Communication Skills: The educational interpreter should demonstrate ability to understand students through speech, speechreading, signs, and/or Cued Speech as appropriate. Educational interpreters specializing in the use of signs should demonstrate ability to understand a variety of students at different age levels in at least two of the following: ASL, MCE, PSE.

B. Expressive Communication Skills: The educational interpreter should demonstrate the ability to make himself/herself understood to a variety of students at a variety of age levels through speech, signs, and/or Cued Speech as appropriate. Educational interpreters specializing in the use of signs should demonstrate ability to make themselves understood to students in at least two of the following: ASL, MCE, PSE.

C. Educational Interpreting Skills to include one or more of the following:

1. Interpret from spoken English to American Sign Language and from American Sign Language to spoken English.

2. Transliterate from spoken English to Manually Coded English and from Manually Coded English to spoken English.

3. Transliterate from spoken English to Pidgin Sign English and from Pidgin Sign English to spoken English.

4. Orally transliterate from spoken English to visible English and visible English to spoken English.

5. Cue from spoken English to Cued Speech and from Cued Speech to spoken English.

VI. Observation and Practicum

The multifaceted aspects of the educational interpretering task require observation and performance of the job roles and responsibilities in kindgergarten through twelfth grade. The goal of the observation/practicum component is to provide direct experience in the application of competencies listed in sections I-V of this document. Educational interpreters will gain this experience through:

A. Observation: The educational interpreter should have an opportunity to observe and participate in a variety of levels and settings throughout his or her preparation.

B. Evaluation: An evaluation of skills for the mode in which the educational interpreter is receiving training (e.g.. ASL interpreting, Cued Speech transliteration, oral transliteration, etc.) must be passed prior to a practicum placement.

C. Practicum Experience
It is recommended that a semester (or the equivalent) of full time practicum be required. Participation in at least two supervised practicum experiences at different educational levels and settings is recommended.

PART B
SUGGESTED ROUTES TO CERTIFICATION AS AN EDUCATIONAL INTERPRETER

Certification as an Educational Interpreter K-12 is a very new concept. Mainstream placements for deaf and hard of hearing children increased markedly after the passage of Public Law 94-142 in 1975, and many of the individuals now working with these students began as instructional aides. There were until recently no training programs focusing on educational interpreting K-12. The implementation of standards must take account of these facts and recognize the need of these individuals for certification, while at the same time providing for certification of individuals completing newly developed programs of specialized training as educational interpreters.

I. PROVISIONAL CERTIFICATION FOR CURRENTLY WORKING EDUCATIONAL INTERPRETERS

This is a five-year, non-renewable certification for:

A. Persons who have completed a formal interpreter preparation program with a certificate of completion, AA degree, or higher.

B. Persons who have received interpreter certification from a statewide or nationally recognized organization or certifying body.

C. Persons who have been working for a minimum of four years as an educational interpreter in a K-12 setting.

The requirements for each of the above groups for the granting of a provisional certificate are either A, B or C:

BACKGROUND	ADDITIONAL REQUIREMENT
A. Completion of interpreter preparation program with non- educational interpreting focus	1. Two years of full time equivalent educational interpreting K-12 and recommendation of supervisor OR 2. Documented evidence of satisfactory completion of 21 additional credits or CEUs or equivalent.[1]
BACKGROUND	ADDITIONAL REQUIREMENT
B. Certificate from statewide or nationally recognized organization or certifying body	1. Two years of full time equivalent educational interpreting K-12 and recommendation of supervisor OR 2. Documented evidence of satisfactory completion of 21 additional credits or CEUs or equivalent.[1]

[1] See Attachment 1 for list of recommended coursework areas.

C. A minimum of four years of full time equivalent experience as an educational interpreter K-12 with recommendation of supervisor.	A skills evaluation recognized by a state or national level body

STANDARD CERTIFICATION FOR CURRENTLY WORKING EDUCATIONAL INTERPRETERS

Standard certification may be obtained by individuals who have met all of the requirements for one of the Provisional Certification options listed above

PLUS

1. Documented evidence of satisfactory completion of 21 ADDITIONAL credits or CEUs in educational interpreting areas within the preceding five years.

AND

2. A minimum of two years successful experience at the K-12 level, with recommendation by supervisor.

II. FOR INDIVIDUALS GRADUATING FROM EDUCATIONAL INTERPRETER PREPARATION PROGRAMS DESIGNED TO DEVELOP THE COMPETENCIES APPROVED BY CED/RID

I. PROVISIONAL CERTIFICATION

Provisional certification will be automatically granted to graduates of Educational Interpreter Preparation Programs whose programs cover the competencies approved by CED/RID. This certification is for a five year period and is not renewable.

II. STANDARD CERTIFICATION

The standard certificate will be granted to Educational Interpreter Preparation Program graduates who receive Provisional Certification upon the completion of two years of successful work experience at the K-12 level upon the recommendation of their supervisor.

ATTACHMENT ONE

If the interpreter preparation program from which a degree or certificate of completion was obtained did not include the following, the 21 credits should be in these areas:

Introduction to Education
Introduction to Special Education
Introduction to Education of Deaf and Hard of Hearing Students
Child Development
Introduction to Educational Interpreting
Paraprofessional Skills (including tutoring, media usage, instruction of sign language/deaf awareness classes, etc.)
Educational Interpreting Seminar
or
additional skills development courses related to educational interpreting

Appendix C

Cued Speech Transliteration:
The Evolution of a Profession

The Evolution of a Profession

By Earl Fleetwood and Melanie Metzger

As Cued Speech outgrows its 25th year of existence, the Cued Speech community stands poised, ready to usher in a new era of opportunity for deaf Cued Speech consumers. Undeniable proof (Nichols; Wandel; Alegria, etc.) that Dr. R. Orin Cornett's vision lives, now beckons the attention of an ever-doubtful, sometimes scornful array of deaf educators. Off to college and into the world of freelance interpreting/transliterating services goes the first group of deaf children who have grown up in the light of that vision as well as in the shadow of those non-believers. Yet, even as these words are penned, the vision is expanding.

Within the realm of that expanding vision lies the profession of Cued Speech transliteration, an increasingly visible marker of this new era of opportunity. The demand for Cued Speech transliterating services is rapidly spreading beyond the once easily defined bounds of the cueing community. From deaf preschooler to adventitiously deafened adult, from affluent county school system to two-room country school, and from college classroom to job interview and doctor's office, the call is out for Cued Speech transliterators. An overwhelming need for Cued Speech transliterators has come of age.

Until 1980, when almost all deaf people who had grown up using Cued Speech were children less than ten years old, the call for Cued Speech transliterators was answered by the parents of these children as well as other concerned family members and friends in the community. Without this caring group of committed service providers, the direction of Cued Speech itself would probably have been profoundly different. These individuals assured the existence of essential services often with little or no financial compensation and with the ad hoc training the situation demanded. The successes of their children, as well as Cued Speech, was literally in their hands.

In 1980, the service of Cued Speech transliteration was forever changed. A practice born of dedicated parents finding a way to educate their deaf children took a turn toward becoming a legitimate profession. Barbara Williams-Scott, M.A., Deaf Education, and Earl Fleetwood, Cued Speech transliterator, began to record information related to the provision of Cued Speech transliterating services. They analyzed the mainstream condition, the meaning of equal access, the responses of clients with various needs to the implementation of certain communication facilitation techniques/strategies, the relationship between the effective dispensation of services and the delineation of functional roles and responsibilities, and the impact of Cued Speech transliteration upon the disposition of true mainstreaming. Before that time such documentation had never occurred.

In 1985, another significant step was taken in the evolution of Cued Speech transliteration as a profession. The first Cued Speech transliterator training program was established under the direction of Barbara Williams-Scott at Gallaudet University with Earl Fleetwood serving as a trainer. Since that time, the foundation of all information disseminated at this training program has been rooted in their documentation and case analyses.

In 1987, Melanie Metzger, sign language interpreter/Cued Speech transliterator, joined the training program. She began recording observations associated with the cultural significance of sign language interpreting and Cued Speech transliterating in the mainstream setting as well as analyzing the relationship of each to the provision of equal access and the establishment of true mainstreaming.

Other milestones in the professionalization of Cued Speech transliteration include:

1) publication of the Cued Speech Transliterator Code of Conduct (©1988 Fleetwood & Metzger). This document serves to define the role and function of a Cued Speech transliterator as well as to clearly define functional boundaries of the profession.

2) development and implementation of the Cued Speech Transliterator National Certification Examination (CSTNCE ©1988 Fleetwood, Metzger, Williams-Scott; rev. '91). This examination serves to test an individual's knowledge and skills regarding national standards of practice of the profession. Certificates are awarded to individuals who meet these defined standards of knowledge and skill.

3) development and implementation of the Cued Speech Transliterator State-level Evaluation (©1991 Fleetwood & Metzger). While less comprehensive than the CSTNCE, this evaluation provides appropriate state agencies the opportunity to identify knowledgeable and skilled Cued Speech transliterators in accordance with state mandates.

The profession of Cued Speech transliteration has grown tall and proud in a relatively short amount of time. Much like the deaf Cued Speech users graduating from high school, it is not the youngster it used to be. Yet, this profession and the population it serves, both products of great potential and undeniable proof, still beckon the attention of those who choose not to believe. As Cued Speech outgrows its 25th year, each struggles in the light of a vision while side-stepping a shadow of doubt. If deaf consumer and transliterator are to realize their potential, they need our care and support.

revised 6/92

CUED SPEECH TRANSLITERATOR CODE OF CONDUCT

A Cued Speech Transliterator shall:

FACILITATE COMMUNICATION BETWEEN DEAF/HARD-OF-HEARING CUED SPEECH CONSUMERS AND HEARING CONSUMERS

Cued Speech transliterators serve to remove expressive and receptive communication difficulties/ambiguities between deaf/hard-of-hearing consumers and hearing consumers. Facilitation of communication (spoken), however, should not exclude concurrent consideration for and conveyance of auditory environmental stimuli.

PROVIDE SOUND-BASED ENVIRONMENTAL INFORMATION TO DEAF/HARD-OF-HEARING CONSUMERS OF CUED SPEECH

Cued Speech transliterators should include appropriate representation of auditory environmental stimuli as it occurs, without the influence of personal judgment as to its value to the deaf/hard-of-hearing consumer. This conveyance of auditory environmental stimuli should serve to facilitate a common mainstream experience. Inclusion of auditory environmental stimuli, however, should not exclude concurrent consideration for and facilitation of spoken communication.

PROVIDE APPROPRIATE TRAINING TO DEAF/HARD-OF-HEARING CONSUMERS TO ALLOW FOR PROPER TRANSLITERATOR UTILIZATION

Cued Speech transliterators serve in an ongoing training capacity with regard to client-transliterator utilization. The development of transliterator usage skills should always be facilitated with tact, reasonable judgment, and prudent regard for the rights of the deaf/hard-of-hearing client.

PROVIDE HEARING CONSUMERS WITH APPROPRIATE DEMONSTRATION/EXPLANATION OF THE TRANSLITERATOR ROLE

It is reasonable to assume that hearing consumers are unfamiliar with or do not understand the aspects of a transliterating situation which are intended to preserve the equal access rights of the deaf/hard-of-hearing consumer. Consequently, Cued Speech transliterators must secure the confidence and support of said consumers through role demonstration and/or explanation in order to appropriately implement methods used to preserve these equal access rights.

1616 Parham Road, Silver Spring, MD 20903 • (301) 439-5766 V/TTY

DEMONSTRATE AND IMPLEMENT ONGOING REVERENCE FOR THE PRESERVATION AND PROMOTION OF COMPLETE AND EQUAL ACCESS

Cued Speech transliterators should always employ the skills and conduct necessary to preserve the equal access rights of the deaf/hard-of-hearing consumer. This includes appropriate remediation of the lack of logistical and/or ethical consideration on the part of others. Equal access rights include unconventional as well as conventional factors available to the mainstream population.

PROMOTE THE PROGRESSION OF EVENTS AS IF CIRCUMSTANCES DO NOT NECESSITATE TRANSLITERATOR PRESENCE

Cued Speech transliterators strive to maintain an atmosphere, environment, and consequent experience unaffected, even incidently, by their necessary presence and function. Most individuals rarely come in contact with a working transliterator in a mainstream situation. Consequently, the common mainstream experience is not influenced by the presence of a transliterator. Therefore, to allow the deaf/hard-of-hearing consumer equal access to this common experience, transliterators must avoid influencing the atmosphere, environment, and resulting experience of the mainstream.

ADHERE TO THE ETHICAL STANDARDS OF TRANSLITERATING FOR DEAF/HARD-OF-HEARING CONSUMERS

Deaf/hard-of-hearing consumers must be able to trust that through Cued Speech transliterator utilization they are consequently afforded the same conventional and unconventional rights, privileges, and opportunities as individuals who need not utilize such services. Ethical standards have been adopted and must be practiced by transliterators to secure the trust of consumers and offer them fair and equal access.*

*(*the Code of Ethics of the Registry of Interpreters for the Deaf, Inc., ©1989 RID, Inc.)*

SUPPORT THE PROFESSION OF CUED SPEECH TRANSLITERATION BY STRIVING TO IMPROVE RELATED SKILLS AND KNOWLEDGE AND THE APPLICATION THEREOF

The deaf/hard-of-hearing consumer is entitled to receive the most effective service available in the field of Cued Speech transliteration. Therefore, it is the professional responsibility and ethical obligation of Cued Speech transliterators to adhere to and implement the currently accepted philosophies and techniques in the field.

© 1989 Fleetwood, Metzger
Calliope Press

1616 Parham Road, Silver Spring, MD 20903 • (301) 439-5766 V/TTY

CUED SPEECH TRANSLITERATOR NATIONAL CERTIFICATION EXAMINATION (CSTNCE)

©1988 Fleetwood, Metzger, Williams-Scott; rev. '91

An Overview

The CSTNCE is comprised of the following components:

The Basic Cued Speech Proficiency Rating (©1983 Beaupré) provides a framework for assessing and categorizing expressive cueing proficiency and formulating diagnostic feedback. As part of the CSTNCE, the BCSPR is recorded on videotape for subsequent analysis, scoring, and determination of recommendations.

The Syllables Per Minute Assessment (©1988 Williams–Scott; rev. '91; developed from profile by Koehler-Cesa) provides a framework for analyzing and assessing expressive cueing fluency during the process of transliteration. The certification candidate's ability to maintain modeled cueing proficiency (as determined by the BCSPR profile) is analyzed for transliterating tasks ranging from two (2) to five (5) syllables per second. This subsection of the CSTNCE is based on the average conversational speaking rate of three (3) syllables per second, as determined by Dr. Daniel Ling. The certification candidate is videotaped.

The Cued Speech Reading Test (©1986 Beaupré) provides a framework for determining whether or not an individual can utilize Cued Speech receptively toward the comprehension of spoken messages (without the aid of sound). The individual views a videotape and records responses on an answer form.

The CSTNCE Written Assessment (©1988 Fleetwood, Metzger, Williams-Scott; rev. '91) is a 150 question multiple choice test designed to measure the certification candidate's knowledge of the role and function of a Cued Speech transliterator as specified by the Cued Speech Transliterator Code of Conduct (©1989 Fleetwood & Metzger), the Code of Ethics as established by the Registry of Interpreters for the Deaf, Inc. (©1989 RID, Inc.) as well as other information related or significant to the various duties of a professional Cued Speech transliterator. Included are questions pertaining to: hearing-impairment/deafness in general, language development, audiology, speech (development/production), linguistics, inservicing, Cued Speech research, cue reading, Cued Speech oral coding, cue notation, organizations related to deaf/hard-of-hearing people in particular, interpreting terminology, interpreting ethics, various tactics for facilitating communication, and issues related to sign language and the Deaf community.

The CSTNCE Performance Assessment (©1988 Fleetwood, Metzger; rev. '91) is designed to allow each certification candidate an opportunity to demonstrate the ability to implement knowledge, conduct, and skills relevant to Cued Speech transliteration. Factors considered include: eye contact, cueing delivery, voicing of deaf/hard-of-hearing consumers, expression, appearance, indication of sound source, and adherence to the Code of Conduct and Code of Ethics. Other evaluated factors include the candidate's ability to paraphrase/summarize and convey dialectical details, dramatic material, and Auditory Environmental Stimuli (AES). The certification candidate is videotaped.

The CSTNCE Commentary (©1991 Fleetwood, Metzger) requires that the candidate view a videotape of Cued Speech transliterators working in various situations/circumstances and comment on functional considerations related to the role, responsibilities, and/or duties expected of and modeled by these transliterators in deference to the Cued Speech Transliterator Code of Conduct.

©1993 Fleetwood & Metzger
Calliope Press

Cued Speech Transliterator
Preparatory Materials List and Training Options

The functional role of a Cued Speech transliterator represents a unique and complex utilization of knowledge and skill. In order to serve appropriately, a fundamental understanding of numerous disciplines must be incorporated into each decision a working transliterator makes. These decisions must be arrived at and implemented within a well-established ethical framework and toward a well-defined goal. The subsequent ability to effectively and efficiently act upon these decisions is dependent upon the existence of complementary mental and physical attributes as well as the talent to apply them.

The following recommended readings and other suggested sources of information have been compiled with regard for the disciplines, framework, goal, and attributes mentioned above. **However, this list is not exhaustive.** Related readings and course work, workshops, and other learning sources are highly recommended. Knowledge equivalent to introductory course work in sociology, speech pathology, audiology, linguistics, and the profession of interpreting/transliterating for deaf/hard-of-hearing people is also recommended. Items on this list are not intended as replacements for training and evaluation by approved personnel and/or appropriately directed on-the-job experience.

MATERIALS

Cued Speech Transliteration: Theory and Application
by Earl Fleetwood and Melanie Metzger (1990)
$14.00 *($12.50 plus $1.50 shipping/handling [per book])*
Metzger/Fleetwood
1616 Parham Road
Silver Spring, MD 20903
check payable to: Earl Fleetwood

Sign Language Interpreting: A Basic Resource Book
by Sharon Neumann Solow
$10.70 *($8.95 plus $1.75 shipping/handling)*
National Association of the Deaf
814 Thayer Avenue
Silver Spring, MD 20910
check payable to: National Association of the Deaf

Interpreting: An Introduction
by Nancy Frishberg
$22.45 *($19.95 plus $2.50 shipping/handling)*
Registry of Interpreters for the Deaf, Inc.
8719 Colesville Road, Suite 310
Silver Spring, MD 20910
check payable to: RID

Cued Speech Journal: Special Research Issue (Volume 4, 1990)
publication of the National Cued Speech Association
$10.00 *(includes shipping/handling)*
National Cued Speech Association
P.O. Box 31345
Raleigh, NC 27622
check payable to: NCSA

Guide to the Proper Practice of Cued Speech Transliteration
by Earl Fleetwood and Melanie Metzger (1992)
$16.95 *($14.95 plus $2.00 shipping/handling (per guide)*
Metzger/Fleetwood
1616 Parham Road
Silver Spring, MD 20903
check payable to: Earl Fleetwood

Gaining Cued Speech Proficiency — A Manual for Parents, Teachers and Clinicians
by Walter J. Beaupré
$10.00 *(includes shipping/handling)*
Available through:
Gallaudet University
Department of Audiology and Speech/Language Pathology
Cued Speech
800 Florida Ave., N.E.
Washington, D.C. 20002–3695
check payable to: Audiology and Speech

Cued Speech Interpreter's Packet
by Cued Speech Team, Gallaudet University
$10.00 *(includes shipping/handling)*
send check (to Gallaudet address listed above)
payable to: Audiology and Speech

Cued Speech Educational Interpreting — An Overview
Script of 90 minute presentation given by Earl Fleetwood
for details, contact Gallaudet address listed above

Cued Speech News *(subscription)*
Gallaudet University, Cued Speech Team
$10.00 *(including postage)*
send check (to Gallaudet address listed above)
payable to: Cued Speech News '93

TRAINING OPTIONS

Cued Speech Interpreter Training Programs I, II and III
Gallaudet University, CSITPs
(summer programs — inquire to Gallaudet address listed above)

Cued Speech Transliterator Training Workshops & Skills Practice Materials
Training, Evaluation and Certification Unit
inquiries should be addressed to:
TECUnit, 1616 Parham Road, Silver Spring, MD 20903

Appendix D

Joint Committee on Infant Hearing
1994 Position Statement

JOINT COMMITTEE ON INFANT HEARING 1994 POSITION STATEMENT

This 1994 Position Statement was developed by the Joint Committee on Infant Hearing. Joint committee member organizations that approved this statement and their respective representatives who prepared this statement include the following: American Speech-Language-Hearing Association -- Allan O. Diefendorf, PhD, Chair; Deborah Hayes, PhD; and Evelyn Cherow, MA, ex officio: American Academy of Otolaryngology-Head and Neck Surgery -- Patrick E. Brookhouser, MD, and Stephen Epstein, MD: American Academy of Audiology -- Terese Finitzo, PhD, and James W. Hall, III, PhD: American Academy of Pediatrics -- Allen Erenberg, MD, and Nancy Roizen, MD: Council on Education of the Deaf (A.G. Bell Association for the Deaf, Association of College Educators: Deaf and Hard of Hearing, Convention of American Instructors of the Deaf, and the Conference of Educational Administrators Serving the Deaf) -- Barbara Bodner-Johnson, PhD, and Donna Dickman, PhD: Directors of Speech and Hearing Programs in State Health and Welfare Agencies -- Thomas Mahoney, PhD, and Kathie J. Mense, MS: Consultant: Jerry Northern, PhD.

POSITION STATEMENT*

The Joint Committee on Infant Hearing endorses the goal of universal detection of infants with hearing impairment as early as possible. All infants with hearing impairment should be identified before three months of age, and receive intervention by six months of age.

I. BACKGROUND

In 1982, the Joint Committee on Infant Hearing recommended identification of infants at risk for hearing loss in terms of specific risk factors and suggested follow-up audiologic evaluation until an accurate assessment of hearing could be made (Joint Committee on Infant Hearing, 1982; American Academy of Pediatrics, 1982). In 1990, the Position Statement was modified to expand the list of risk factors and recommend a specific hearing screening protocol.

In concert with the national initiative *Healthy People 2000* (U.S. Department of Health and Human Services, Public Health Service, 1990), which promotes early identification of children with hearing loss, this 1994 Position Statement addresses the need to identify *all* infants with hearing loss.

The prevalence of newborn and infant hearing loss is estimated to range from 1.5 to 6.0 per 1,000 live births (Watkin, Baldwin, & McEnery, 1991; Parving, 1993; White, Vohr, & Behrens, 1993). Risk factor screening identifies only 50% of infants with significant hearing loss (Pappas, 1983; Elssman, Matkin, & Sabo, 1987; Mauk, White, Mortensen, & Behrens, 1991). Failure to identify the remaining 50% of children with hearing loss results in diagnosis and intervention at an unacceptably late age.

This 1994 Position Statement

1. endorses the goal of universal detection of infants with hearing impairment and encourages continuing research and development to improve techniques for detection of and intervention for hearing impairment as early as possible;

2. maintains a role for the high risk factors (hereafter termed indicators) described in the 1990 Position Statement, and modifies the list of indicators associated with sensorineural and/or conductive hearing loss in newborns and infants;

3. identifies indicators associated with late-onset hearing loss and recommends procedures to monitor infants with these indicators;

4. recognizes the adverse effects of fluctuating conductive hearing loss from persistent or recurrent otitis media with effusion (OME) and recommends monitoring infants with OME for hearing loss;

5. endorses the provision of intervention services in accordance with Part H of the Individuals with Disabilities Education Act (IDEA); and

6. identifies additional considerations necessary to enhance early identification of infants with hearing loss.

II. CONSIDERATIONS FOR DETECTING HEARING IMPAIRMENT IN INFANTS

A successful infant hearing program must detect hearing impairment that will interfere with normal development of speech and oral language. Because normal hearing is critical for speech and oral language development as early as the first six months of life, (Kuhl, Williams, Lacerda, Stephens, & Lindbloom, 1992) it is desirable to identify infants with hearing loss before three months of age.

Facilities or agencies that implement infant hearing programs must develop protocols to achieve identification of all infants with hearing impairment. To gain access to most infants, the Joint Committee on Infant Hearing recommends the option of evaluating infants before discharge from the newborn nursery. For infants discharged early or delivered at an alternative birthing site, it is desirable to have their hearing assessed before three months of age.

Concern for hearing should not stop at birth. Some children may develop delayed-onset hearing loss. For infants identified with indicators associated with delayed-onset hearing loss (see Sections III B and III C, below) on-going monitoring and evaluation will be necessary (ASHA, 1991a).

A. Technical Considerations

Hearing loss of 30 dB HL and greater in the frequency region important for speech recognition (approximately 500 thru 4000 Hz) will interfere with the normal development of speech and language. Techniques used to assess hearing of infants must be capable of detecting hearing loss of this degree in infants by 3 months and younger. Of the various approaches to newborn hearing assessment currently available, two *physiologic measures* (auditory brainstem response or ABR and otoacoustic emissions or OAE) show good promise for achieving this goal.

ABR has been recommended for newborn hearing assessment for almost 15 years (Schulman-Galambos & Galambos, 1979) and has been successfully implemented in both risk register and universal newborn hearing screening programs (Galambos, Hicks, & Wilson, 1982, 1984; Kileny, 1987; Amochaev, 1987; Hyde, Riko, & Malizia, 1990). Follow-up studies of infants screened by this technique demonstrate acceptable identification of infants with hearing loss (Stein, Ozdamar, Kraus, & Paton, 1983; Kileny & Magathan, 1987).

More recently, OAEs have been introduced for risk register and assessment of newborn hearing (Bonfils, Uziel, & Pujol, 1988; Stevens et al., 1989, 1990; Kennedy et al., 1991; White & Behrens, 1993). Follow-up studies of infants screened by this technique are limited but suggest that OAEs can identify infants with hearing loss of approximately 30 dB HL and greater (Kennedy et al., 1991).

Specific characteristics of test performance for ABR and OAE have not been fully defined in universal infant hearing detection applications. Because direct comparisons of ABR and OAE test performance are not currently available, the Joint Committee on Infant Hearing recommends that each team of health care professionals responsible for the development and implementation of infant hearing programs evaluates and selects the technique that is most suitable for their care practices. New technologies or improvements to existing technologies that substantially enhance infant hearing assessment should be incorporated into existing programs as appropriate.

While each of the two physiologic measures has its advantages and disadvantages, both procedures out-perform behavioral assessment in newborn hearing detection applications. *Behavioral measures*, including automated behavioral techniques, cannot validly and reliably detect the criterion hearing loss of 30 dB HL in infants less than six months of age. (Jacobson & Morehouse, 1984; Durieux -Smith et al., 1987; Hosford-Dunn et al., 1987). However, for infants 6 months developmental age and older, conditioned behavioral techniques provide reliable and valid measures of hearing sensitivity (ASHA, 1991).

B. Personnel

A team of professionals, including audiologists, physicians (otolaryngologists and pediatricians), and nursing personnel, is often involved in the establishment of infant hearing programs. Audiologists should supervise infant hearing assessment programs. Personnel appropriate to the infant hearing program who are trained and supervised by an audiologist may conduct some aspects of the infant hearing program (NIH Consensus Conference, 1993).

C. Implementation

Conditions that permit implementation and/or conversion to a universal infant hearing program, as well as timelines to initiate such programs, will vary by program and location. However, program development as well as specific timelines should be established by each program to move toward the Joint Committee's goal. Pending development of programs to identify ***all*** infants with hearing impairment, the Joint Committee on Infant Hearing recommends that programs based on indicators and currently in operation continue to provide assessment services to those identified infants. The section that follows lists indicators associated with sensorineural and/or conductive hearing loss in neonates (Section III A) and infants (Section III B). Upon implementation of universal infant hearing programs, these indicators may be used to aid in the etiologic diagnosis of hearing loss as well as to identify those infants who develop health conditions associated with hearing loss and who therefore require on-going hearing monitoring.

D. Cost/Benefit Analysis

Cost/benefit analysis of infant hearing programs should include consideration of direct cost of identification, assessment and intervention. In addition, it may be valuable to determine the cost savings which accompany early detection and the subsequent management of the child with hearing impairment. Each infant hearing program should develop the cost/benefit analysis associated with its' specific protocol. Results of cost/benefit analysis will vary widely due to differences in protocol, location, geographic and economic considerations, and other factors.

III. INDICATORS ASSOCIATED WITH SENSORINEURAL AND/OR CONDUCTIVE HEARING LOSS:

A. For use with neonates (birth - 28 days) when universal screening is not available.

1. Family history of hereditary childhood sensorineural hearing loss.

2. In utero infection, such as cytomegalovirus, rubella, syphilis, herpes, and toxoplasmosis.

3. Craniofacial anomalies, including those with morphological abnormalities of the pinna and ear canal.

4. Birth weight less than 1500 grams (3.3 lbs.).

5. Hyperbilirubinemia at a serum level requiring exchange transfusion.

6. Ototoxic medications including but not limited to the aminoglycosides used in multiple courses or in combination with loop diuretics.

7. Bacterial meningitis.

8. Apgar scores of 0-4 at one minute or 0-6 at five minutes.

9. Mechanical ventilation lasting 5 days or longer.

10. Stigmata or other findings associated with a syndrome known to include a sensorineural and/or a conductive hearing loss.

B. For use with infants (29 days - 2 years) when certain health conditions develop that require re-screening

1. Parent/caregiver concern regarding hearing, speech, language, and/or developmental delay.

2. Bacterial meningitis and other infections associated with sensorineural hearing loss.

3. Head trauma associated with loss of consciousness or skull fracture.

4. Stigmata or other findings associated with a syndrome known to include a sensorineural and/or a conductive hearing loss.

5. Ototoxic medications including but not limited to chemotherapeutic agents or aminoglycosides used in multiple courses or in combination with loop diuretics.

6. Recurrent or persistent otitis media with effusion for at least 3 months.

C. For use with infants (29 days - 3 years) who require periodic monitoring of hearing.

Some newborns and infants may pass initial hearing screening but will require periodic monitoring of hearing to detect delayed onset sensorineural and/or conductive hearing loss. Infants with these indicators require hearing evaluation at least every 6 months until age 3 years, and at appropriate intervals thereafter.

Indicators associated with delayed onset sensorineural hearing loss include:

1. Family history of hereditary childhood hearing loss.

2. In utero infection, such as cytomegalovirus, rubella, syphilis, herpes, or toxoplasmosis.

3. Neurofibromatosis Type II and neurodegenerative disorders.

Indicators associated with conductive hearing loss include:

1. Recurrent or persistent otitis media with effusion.

2. Anatomic deformities and other disorders that affect eustachian tube function.

3. Neurodegenerative disorders.

IV. EARLY INTERVENTION

When hearing loss is identified, evaluation and early intervention services should be provided in accordance with the Individuals with Disabilities Education Act (IDEA), Part H Public Law 102-119 (formerly PL 99-457). A multidisciplinary evaluation will be completed to determine eligibility and to assist in developing an individualized family service plan (IFSP) to describe the early intervention program. Because specific services and service eligibility are not uniform from state to state, potential service users and service providers should contact their state Resource Access Projects (RAP) coordinators for information.

The full evaluation process should be completed within 45 days of referral. However, intervention services may commence before the completion of the evaluation if parental/caregiver consent is obtained and an interim IFSP is developed. Specifically, early intervention services that might be offered before completion of the full evaluation of all developmental areas include the provision of amplification, support, and information to parents regarding hearing loss and the range of intervention alternatives available.

The interim IFSP should include the name of the service coordinator who will be responsible for both implementation of the interim IFSP and
coordination of activities among other agencies and persons.

The multidisciplinary evaluation and assessment of an infant identified with hearing loss should be performed by a team of professionals working in conjunction with the parent/caregiver. The professionals may include, depending on the needs of the individual:

1. A physician with expertise in the management of early childhood otologic disorders.

2. An audiologist with expertise in the assessment of infants and young children to determine type, degree, symmetry, stability, and configuration of hearing loss, and to recommend amplification devices appropriate to the child's needs (e.g., hearing aids, personal FM systems, vibrotactile aids, and/or cochlear implants).

3. A speech-language pathologist, audiologist, sign language specialist, and/or teacher of children who are deaf or hard of hearing with expertise in the assessment and intervention of communication skills.

4. Other professionals as appropriate for the individual needs of the child and family.

This team will develop a program of early intervention services (IFSP) based upon the child's unique strengths and needs and consistent with the resources, priorities, and concerns of the family related to enhancing the child's development. This multidiciplinary team must include the parent/caregiver. Team planning should be cognizant of and sensitive to the range of available communication and educational choices, and parents should be provided sufficient information regarding all options to enable them to exercise informed consent when selecting their child's program. Components of an early intervention program for children with hearing loss and their families should include

1. Family support and information regarding hearing loss and the range of available communication and educational intervention options. Such information must be provided in an objective, non-biased way to support family choice. Use of consumer organizations and persons who are deaf or hard-of-hearing to provide such information is recommended. Professional, consumer, state and community-based organizations should be accessed to provide ongoing information regarding legal rights, educational materials, support groups and/or networks, and other relevant resources for children and families.

2. Implementation of learning environments and services designed with attention to the preferences of the family. Such services should be family-centered and should be consistent with the needs of the child, the family, and their culture.

3. Early intervention activities that promote the child's development in all areas, with particular attention to language acquisition and communication skills.

4. Early intervention services that provide ongoing monitoring of the child's medical and hearing status, amplification needs, and development of communication skills.

5. Curriculum planning that integrates and coordinates multidisciplinary personnel and resources so that intended outcomes of the IFSP are achieved.

V. ADDITIONAL CONSIDERATIONS

Successful programs for identifying infants with hearing impairment are characterized by commitment and support from health care administrators, physicians, audiologists, families and caregivers, and a community educated about the importance of hearing and infant development. Because of the dynamic changes occurring in technology and in education and health care policy, the Joint Committee on Infant Hearing recommends consideration of the following factors to facilitate the establishment and maintenance of infant hearing programs:

1. Development of a uniform state and national database incorporating standardized technique, methodology, reporting, and system evaluation. This database will enhance patient outcomes, program evaluation (including efficacy and cost/benefit analysis), continuous quality improvement, and public policy development.

2. Development of a tracking system to insure that newborns and infants identified with or at risk for hearing loss have access to evaluation, follow-up, and intervention services.

3. Systematic evaluation of techniques for identification and assessment, and intervention for hearing impairment in infants. Replication and on-going assessment of current programs will assist in evaluation of efficacy of infant hearing programs and widespread acceptance of the benefits of early identification of infants with hearing loss.

4. On-going refinement of current indicators associated with sensorineural and/or conductive hearing loss.

5. Outcome studies to investigate the impact of early identification upon the degree of literacy and communication competence achieved and to establish factors that contribute to outcome.

6. Continued research into the prevention of hearing loss in newborns and infants.

***The recommendations in this statement do not indicate an exclusive course of treatment or serve as a standard of care. Variations taking into account individual circumstances and unique program needs may be appropriate.**

REFERENCES

American Academy of Pediatrics. (1982). Position Statement 1982-Joint Committee on Infant Hearing. Pediatrics, 70, 496-497.

Amochaev, A. (1987). The infant hearing foundation -- a unique approach to hearing screening of newborns. In K. Gerkin and A. Amochaev (Eds.), Hearing in Infants: Proceedings from the National Symposium, Seminars in Hearing, 8, (pp.165-168).

Bonfils, P., Uziel, A., & Pujol, R. (1988). Screening for auditory dysfunction in infants by evoked oto-acoustic emissions. Archives of Otolaryngology and Head and Neck Surgery, 114, 887-890.

Durieux-Smith, A., Picton, T., Edwards, C., MacMurray, B., & Goodman, J. (1987). The crib-o-gram in the NICU: An evaluation based on brainstem electric response audiometry. Ear and Hearing, 6, 20-24.

Elssmann, S., Matkin, N., & Sabo, M. (1987, September). Early identification of congenital sensorineural hearing impairment. Hear Journal, 40:9, 13-17.

Galambos, R., Hicks, G., & Wilson, M. (1984). The auditory brainstem response reliably predicts hearing loss in graduates of a tertiary intensive care nursery. Ear and Hearing, 5, 254-260.

Galambos, R., Hicks, G., & Wilson, M. (1982). Hearing loss in graduates of a tertiary intensive care nursery. Ear and Hearing, 3, 87-90.

Hosford-Dunn, H., Johnson, S., Simmons, B., Malachowski, N., & Low, K. (1987). Infant hearing screening: Program implementation and validation. Ear and Hearing, 8, 12-20.

Hyde, M., Riko, K., & Malizia, K. (1990). Audiometric accuracy of the click ABR in infants at risk for hearing loss. Journal American Academy of Audiology,1, 59-66.

Jacobson, J. & Morehouse, R. (1984). A comparison of auditory brainstem response and behavioral screening in high risk and normal newborn infants. Ear and Hearing, 5, 254-253.

Joint Committee on Infant Hearing. (1982, December). Position Statement. Asha, pp. 1017-1018.

Kennedy, C., Kimm, L., Dees, D., Evans, P., Hunter, M., Lenton, S., & Thornton, A. (1991). Otoacoustic emissions and auditory brainstem responses in the newborn. Archives of Disease in Childhood, 66, 1124-1129.

Kileny, P. (1987). ALGO-1 automated infant hearing screener: Preliminary results. In K. Gerkin, and A. Amochaev, (Eds), Seminars in Hearing,8, 125-131.

Kileny, P., & Magathan, M. (1987). Predictive value of ABR in infants and children with moderate to profound hearing impairment. Ear and Hearing,8, 217-221.

Kuhl, P.K., Williams, K.A., Lacerda, F., Stephens, K.N., & Lindbloom, B. (1992). Linguistic experience alters phonetics perception in infants by six months of age. Science, 255, 606-608.

Mauk, G.W., White, K.R., Mortensen, L.B., & Behrens, T.R. (1991). The effectiveness of screening programs based on high-risk characteristics in early identification of hearing impairment. Ear and Hearing, 12, 312-319.

National Institutes of Health, Early Identification of Hearing Impairment in Infants and Young Children, Consensus Development Conference on Early Identification of Hearing Impairment in Infants and Young Children, 1993.

Pappas, D.G. (1983). A study of the high-risk registry for sensorineural hearing impairment. Archives of Otolaryngology -Head Neck Surgery, 91, 41-4.

Parving, A. (1993). Congenital hearing disability-epidemiology and identification: A comparison between two health authority districts. International Journal of Pediatric Otolaryngology, 27, 29-46.

Schulman-Galambos, C., & Galambos, R. (1979). Brainstem evoked response audiometry in newborn hearing screening. Archives of Otolaryngology, 105, 86-90.

Stein, L., Ozdamar, O., Kraus, N., & Paton, J. (1983). Follow-up of infants screened by auditory brainstem response in the neonatal intensive care unit. Journal of Pediatrics, 103, 447-453.

Stevens, J., Webb, H., Hutchinson, J., Connell, J., Smith, M., & Buffin, J. (1990). Click evoked otoacoustic emissions in neonatal screening. Ear and Hearing, 11, 128-133.

Stevens, J., Webb, H., Hutchinson, J., Connell, J., Smith, M., & Buffin, J. (1989). Click evoked otoacoustic emissions compared to brainstem electric response. Archives of Disease in Childhood,, 64, 1105-1111.

U.S. Department of Health and Human Services, Public Health Service. (1990). Healthy People 2000: National health promotion and disease prevention objectives. Washington, DC: U.S. Government Printing Office.

Watkin, P., Baldwin, M., & McEnery, G. (1991). Neonatal at risk screening and the identification of deafness. Archives of Disease in Childhood, 66, 1130-1135.

White, K.R., & Behrens, T.R. (Eds) (1993). The Rhode Island hearing assessment project: Implications for universal newborn hearing screening. Seminars in Hearing, 14, 1-119.

SUGGESTED READINGS

Early Identification of Hearing Loss in Neonates and Infants

Alberti, P., Hyde, M., Riko, K., Corbin, H., & Fitzhardinge, P. (1985). Issues in early identification of hearing loss. Laryngoscope, 95, 373.381

American Speech-Language-Hearing Association. (1989, March). Guidelines for audiologic screening of newborn infants who are at-risk for hearing impairment, Asha, pp. 89-92.

American Speech-Language-Hearing Association. (1991). Guidelines for the audiologic assessment of children from birth through 36 months of age. Asha (Suppl. 5), pp. 37-43.

Bergman, I., Hirsch, R.P., Fria, T.J., Shapiro, S.M., Holzman, I., & Painter, M.J. (1985). Cause of hearing loss in the high-risk premature infant. Journal of Pediatrics, 106, 95-101.

Bess, F. H., & Hall, J. W. (Eds.) (1992). Screening children for auditory function, Nashville, TN: Bill Wilkerson Center Press.

Bess, F.H. (Ed.), (1988). Hearing impairment in children. Parkton, MD: York Press.

Brummett, R.E. (1981). Ototoxicity resulting from the combined administration of potent diuretics and other agents. Scandinavian Audiology Suppl 14, 215-224.

Eichwald, J., & Mahoney, T. (1993). Apgar scores in the identification of sensorineural hearing loss. Journal of the American Academy of Audiology, 4, 133-138.

Halpern, J., Hosford-Dunn, H., & Malachowski, N. (1987). Four factors that accurately predict hearing loss in "high risk" neonates. Ear and Hearing, 8, 21-25.

Hendricks-Munoz, K.D., & Walton, J.P. (1988). Hearing loss in infants with persistent fetal circulation. Pediatrics, 81, 650-656.

Jones, K.L. (1988). Smith's recognizable patterns of human malformation (4th ed.). Philadelphia: W.B. Saunders.

Matz, G. (1990). Clinical perspectives on ototoxic drugs. Annals of Otology, Rhinology, and Laryngology, 99, 39-41.

Naulty, C.M., Weiss, I.P., & Herer, G.R. (1986). Progressive sensorineural hearing loss in survivors of persistent fetal circulation. Ear and Hearing, 7, 74-77.

Nield, T.A., Schrier, S., Ramos, A.D., Platzker, A.C.G., & Warburton, D. (1986). Unexpected hearing loss in high-risk infants. Pediatrics, 78, 417-422.

Northern, J.L., & Downs, M.P. (1991). Hearing in Children (4th ed.). Baltimore: Williams and Wilkins.

Turner, R.G. (1990, October). Analysis of recommended guidelines for infant hearing screening. Asha pp. 57-61.

Turner, R.G.(1992). Comparison of four hearing screening protocols Journal of the American Academy of Audiology, 3, 200-207.

Early Intervention

A Report to the Congress of the United States. (1988). The Commission on Education of the Deaf: Toward equality: Education of the deaf.

American Speech-Language-Hearing Association. (1991). The use of FM amplification instruments for infants and preschool children with hearing impairment. Asha (Suppl. 5), pp. 1-2.

Early intervention program for infants and toddlers with handicaps: Final regulations. Federal Register, 54, No. 119, pp. 26306-26348, June 22, 1989.

Kramer, S. J., & Williams, D. R. (1993). The hearing-impaired infant and toddler: Identification, assessment and intervention. Infants and Young Children, 6, 35-49.

Levitt, H., McGarr, N., & Geffner, D. (1987). Development of language and communication skills in hearing impaired children (ASHA Monograph No. 26). Rockville, MD: American Speech-Language-Hearing Association.

Ling, D. (1989). Foundations of spoken language for hearing-impaired children. Washington, DC: Alexander Graham Bell Association for the Deaf.

McGonigel, M.J., Kaufman, R.K., & Johnson, B.H. (Eds.). (1991). Guidelines and recommended practices for the IFSP (2nd edition). Bethesda, MD: Association for the Care of Children's Health.

Infant Hearing Resource (1985). Parent infant communication: A program of clinical and home training for parents and hearing impaired infants (3rd edition). Portland, OR.

Schuyler, V. & Rushmer, N. (1987). Parent infant habilitation: A comprehensive approach to working with hearing impaired infants and toddlers and their families. Portland, OR: Infant Hearing Resource.

Simmon-Martin, A. & Rossi, K. G. (1990). Parents and teachers: Partners in language development. Washington, DC: Alexander Graham Bell Association for the Deaf.

Diagnosis and Management

Bess, F.H. (Ed.). (1988). Hearing Impairment in children. Parkton, MD: York Press.

Calvert, D. R., (1986). Physicians' guide to the education of hearing-impaired children. Washington, DC: Alexander Graham Bell Association for the Deaf.

Diefendorf, A.O. (Ed.) (1990). Pediatric audiology. Seminars in Hearing, 11, 315-411.

Dodge, P.R., Davis, H.D., Feigin, R.D., Homes, S.J., Kaplan, S.L., Jubeliere, D.P., Stechenberg, B.W., & Hirsh, S.K. (1984). Prospective evaluation of hearing impairment as a sequela of acute bacterial meningitis. New England Journal of Medicine, 311, 869-874.

Ross, M. (1992). Implications of audiologic success. Journal of the American Academy of Audiology, 3, 1-4.

Ross, M. (1990, February/March). Implications of delay in detection and management of deafness. Volta Review,

Roush, J. & McWilliams, R.A. (1990). A new challenge for pediatric audiology: Public Law 99-457. Journal of the American Academy of Audiology, 1, 196-208.

United States House of Representatives 99th Congress, 2d session. Report 99-860. Report accompanying the education of the handicapped act amendment of 1986.

Watkins, S. & Clark, T. (1993). The SKI-HI Model: A Resource manual for family centered, home-based programming for infants, toddlers, and preschool-aged children with hearing impairment. Logan, UT: HOPE, Inc.

Appendix E

Service Provision to Children Who Are Deaf or Hard of Hearing: 0-36 Months

TECHNICAL REPORT
JOINT COMMITTEE OF ASHA AND THE COUNCIL ON EDUCATION OF THE DEAF REGARDING SERVICE PROVISION UNDER THE INDIVIDUALS WITH DISABILITIES EDUCATION ACT - PART H, AS AMENDED (IDEA - PART H) TO CHILDREN WHO ARE DEAF AND HARD OF HEARING AGES BIRTH TO 36 MONTHS

The following report was prepared by the Joint Committee of the American Speech- Language-Hearing Association (ASHA) and the Council on Education of the Deaf (CED) to provide all represented organizations with information regarding the provision of services mandated under the Individuals with Disabilities Education Act - Part H, as amended (IDEA - Part H). Specifically, this document pertains to children who are deaf and hard of hearing ages birth to 36 months who are eligible for services under the Individuals with Disabilities Education Act - Part H, as amended (IDEA - Part H). The report was approved in August 1993 by the ASHA Executive Board (EB 110-93) and by the CED Board in December 1993.

Present and past committee members responsible for the development of this technical report include Stephen J. Boney, ASHA chair (1990-1992); Antonia Brancia Maxon, ASHA chair (1986-1989); Linda Seestedt-Stanford, ASHA chair (1993); Harold Meyers, CED chair (1991); Jean Moog, CED chair (1986-1990); Evelyn Cherow, ASHA ex officio; Gerry Bateman; Bert Bell; Stan Brooks; Kathleen Christensen; Diane Golden; Winfield McCord; Marilyn Sass-Lehrer; and Harriet Alexander-Whiting. The monitoring officers included Ann L. Carey, 1992 ASHA president; Diane L. Eger, past vice president for professional practices (1991-93) and Crystal S. Cooper, vice president for professional practices (1994).

Definitions

Key terms used throughout this statement are defined as follows:

Individual Family Service Plan (IFSP): A written plan for providing early intervention services for a child and the child's family. This should be developed jointly by the family and appropriate qualified personnel involved in the provision of early identification/intervention services. The purpose of this plan is described in the Individuals with Disabilities Education Act - Part H, as amended (IDEA - Part H).

Birth to 36-month-old child with hearing loss: A child 0-36 months of age with hearing levels that deviate from audiometric normal. This includes hearing loss of any degree (mild to profound), type, laterality (ear), or age of onset of hearing loss. The terms deaf and hard-of-hearing are used throughout this document and cover the range of hearing loss.

Multidisciplinary team: Involvement of two or more disciplines or professions to provide integrated and coordinated services that include evaluation and assessment activities and development of an IFSP. The professionals on the team should meet the highest educational standards set for their profession and in their respective state in addition to having expertise with deaf and hard of hearing youngsters and their families.

Mode of Communication: Primary sensory modality through which an individual with hearing loss receives and produces language. This includes oral/aural, visual/gestural, sign communication, cued speech, and combinations thereof.

Sensory devices: Any device that is used to improve, augment, or supplement communication. Such devices could include personal hearing aids, wireless FM systems, cochlear implants, vibrotactile units, or other assistive listening devices.

Background

Children who are deaf or hard of hearing and their families/caregivers constitute a unique group whose needs differ from those of other families. The variables that set children with hearing loss apart from those with other disabilities are related to the lack of full access to communication. This can have long-term effects on the child's cognitive, speech, language, and social-emotional development, as well as affect the family system. Early identification, assessment, and management should : (a) be conducted by professionals who have the qualifications to meet the needs of children who are deaf or hard of hearing, particularly infants, toddlers, and their families; (b) be designed to meet the unique needs of the child and family; and (c) include families in an active, collaborative role with professionals in the planning and provision of early intervention services.

Roles, Knowledge, and Experience

The descriptions of knowledge and experience given below are provided with the understanding that the Individuals with Disabilities Education Act - Part H, as amended (IDEA - Part H) requires a team approach and a strong family focus in the development and implementation of the IFSP.

1.0 Role: Participation as a member of a multidisciplinary team

Proficient In:

1.1 Involving families as equal partners on the multidisciplinary team

1.2 Recognizing expertise and roles of members of the multidisciplinary team

1.3 Sharing and consulting in joint goal setting and planning with all members of the team

Knowledge and Experience Needed:

1a. Skill in involving families as equal partners of the multidisciplinary team

1b. Knowledge of first language acquisition and the effects of hearing loss

1c. Knowledge of hearing loss and/or other conditions and their effect on early development of cognition, communication, speech, motor, adaptive and social-emotional development

1d. Knowledge of how a child who is deaf or hard of hearing and/or has special needs affects relationships within the family and community

1e. Knowledge that assessment and management is a dynamic, ongoing process requiring a variety of skills and techniques

1f. Skill in sharing, consulting, joint goal setting and planning with all members of the team

1g. Skill in using appropriate counseling strategies

1h. Knowledge of the various roles of members on the multidisciplinary team

1i. Skill in integrating and implementing the knowledge and recommendations of other team members

1j. Knowledge of resources available for deaf and hard of hearing children and their families including local, state, and national organizations

1k. Knowledge of range of services appropriate to meet the individual needs of the child and family

1l. Knowledge of Deaf culture and issues of cultural diversity as they affect children who are deaf or hard of hearing and their families

1m. Skill in summarizing and integrating assessment information into an educational report and program plan

2.0 Role: Working with Families

Proficient In:

2.1 Facilitating parent/caregiver/professional collaboration

2.2 Recognizing family strengths and challenges and incorporating these in the IFSP

2.3 Providing information to families, in a sensitive manner, regarding financial and emotional support

2.4 Providing families with information pertaining to federal, state, and local legislation for children who are deaf or hard of hearing

Knowledge and Skills Needed:

2a. Sensitivity to cultural diversity and socioeconomic issues

2b. Knowledge and understanding of the child's current level of development and needs and those of the family

2c. Knowledge and understanding of Deaf culture and heritage

2d. Knowledge of federal, state, and local legislation/regulations regarding service provision for 0-36-month-old children who are deaf or hard of hearing

2e. Familiarity with federal, state, and local funding sources for services for 0-36-month-old children who are deaf or hard of hearing

2f. Knowledge of child advocacy agencies and other community service agencies

2g. Knowledge of the range of educational and other related services (e.g., occupational therapy, physical therapy, etc.) available for the child and family

2h. Knowledge of legal rights and due process procedures available for families and children

2i. Knowledge of the range of language and communication options available for the child and family (e.g., American Sign Language, cued speech, simultaneous communication, aural/oral)

2j. Ability to involve adults who are deaf or hard of hearing and families of children who are deaf and hard of hearing as resources for children with hearing loss and their families

3.0 Role: Assessment and diagnosis of hearing loss in 0-36-month-old children

Proficient In:

3.1 Conducting appropriate audiological assessments of 0-36-month-old children according to established guidelines (ASHA, 1991; ASHA, 1989)*

Knowledge and Experience Needed:

3a. Certification and licensure (where applicable) in audiology

3b. Knowledge of pre- and postnatal development of the auditory system and audition

3c. Knowledge of behavioral and electrophysiological techniques for assessing infants and toddlers

3d. Skill in performing and interpreting audiological assessments of infants and toddlers

* For more specific information regarding audiological assessment techniques, see Joint Committee on Infant Hearing Draft Position Statement (1994); Diefendorf (1988); Gravel (1989); Martin (1987); Northern & Downs (1991); and Wilson and Thompson (1984).

4.0 Role: Assessment of communication competence of 0-36-month-old children with hearing loss

Proficient In:

4.1 Administering the appropriate formal and informal communication assessments of 0-36-month-old children with hearing loss using the child's mode of communication and primary language

Knowledge and Skills Needed:

4a. Certification and/or licensure in speech-language pathology with expertise in working with deaf and hard of hearing infants or education of the deaf and hard of hearing

4b. Knowledge of communication development including both visual/gestural and aural/oral

4c. Knowledge of assessment tools appropriate for 0-36-month-old children with hearing loss

4d. Knowledge of techniques for acquiring communication data through observation and interaction

4e. Skill in working with 0-36-month-old children who are deaf or hard of hearing

4f. Skill in assessing parent/caregiver and child communication interactions

4g. Skill in interpreting results with respect to the hearing loss

** For more specific information regarding assessment techniques see, Brackett (1990); Geers and Moog (1987); Moeller, Osenberger, and Morford (1987); and Moeller, Coufal, and Hixon (1990); Spencer, P., Bodner-Johnson, B., and Gutfreund, M. (1992), Schuyler and Rushmer (1987)

5.0 Role: Assessment of cognitive, motor, and social skills of 0-36-month-old children with hearing loss

Proficient In:

5.1 Administering formal, and informal developmental assessments with tools appropriate for 0-36-month-old children who are deaf or hard of hearing using the child's mode of communication and primary language

Knowledge and Skills Needed:

5a. Certification and licensure (where appropriate) in respective areas specific to psychology, occupational therapy, physical therapy, and social work

5b. Knowledge of the development of cognitive, motor, and social skills

5c. Knowledge of the appropriate tools to use with a 0-36-month-old child with hearing loss

5d. Skill in adapting to the needs of the individual child

5e. Ability to incorporate information about hearing loss to modify assessment procedures

5f. Skill in interpreting the above evaluation results with respect to the hearing loss.

6.0 Role: Otological evaluation of the 0-36-month-old child with hearing loss

Proficient In:

6.1 Providing otological information with respect to risk factors, craniofacial anomalies, and syndromes associated with hearing loss

6.2 Conducting routine otological evaluations to rule out and treat conditions amenable to medical or surgical treatment

6.3 Conducting otological evaluations to provide medical clearance for selection and fitting of amplification

Knowledge and Skills Needed:

6a. Certification and licensure in medicine with a specialty in otolaryngology or otology

6b. Knowledge of infant/child development

6c. Knowledge of risk factors for hearing loss

6d. Knowledge of medical genetics related to hearing loss

6e. Knowledge of common etiologies of hearing loss in infants and young children

6f. Knowledge of the possible effects of sequelae of chronic otitis media on language and academic achievement

6g. Experience with the pediatric population

6h. Skill in working with families

7.0 Role: Developing and Implementing the Individual Family Service Plan

Proficient In:

7.1 Establishing family-professional collaboration and partnership

7.2 Coordinating/participating in assessment and identification of services to child and family with multidisciplinary team including the family

7.3 Communicating proficiently in the child and family's mode of communication and primary language

Knowledge and Skills Needed:

7a. Demonstrated understanding of the diversity of family's structure, roles, values and beliefs, and coping styles

7b. Demonstrated understanding of the racial, ethnic, and cultural diversity of the family

7c. Demonstrated understanding of the significance of the family-centered approach

7d. Coordinate/participate in family-directed assessment of the family's resources, priorities, and concerns related to the developmental needs of the child within the family context

7e. Coordinate/participate in comprehensive assessment of the child including relevant professionals and family participation

7f. Communicate results of assessment(s) with family input and participation

7g. Coordinate/participate in identification and provision of recommended services to family and child

7h. Coordinate/participate in IFSP meetings in which family is encouraged to be an active participant

7i. Communicate family rights regarding services and confidentiality issues

7j. Knowledge of legislation related to the provision of services to families with children birth to 36 months

7k. Coordinate/participate in development of expected outcomes for child and family with family participation

8.0 Role: Provision of sensory devices (the use of the term sensory device is specified in the Definitions section of this document)

Proficient In:

8.1 Selecting and fitting the appropriate sensory devices when appropriate

8.2 Evaluating the effectiveness of the sensory devices

8.3 Respecting the child's and families' values regarding the use of sensory devices

Knowledge and Skills Needed:

8a. Certification and licensure (where applicable) in audiology

8b. Knowledge of the various types of sensory devices

8c. Knowledge of the appropriate application of the various types of sensory devices

8d. Knowledge of assessment techniques appropriate for the 0-36-month-old child

8e. Skill in working with the 0-36-month-old child and family members

9.0 Role: Management of sensory devices

Proficient In:

9.1 Observing and evaluating the ongoing benefits of sensory devices

9.2 Troubleshooting of sensory devices

9.3 Care and maintenance of sensory devices

Knowledge and Skills Needed:

9a. Knowledge of the characteristics of sensory devices

9b. Knowledge of troubleshooting techniques for sensory devices

9c. Knowledge of room acoustics, including the effects of noise, reverberation, and distance on speech recognition and environmental modifications to improve room acoustics (ASHA, 1984b)

9d. Knowledge of functional benefit of the sensory device

9e. Skill in troubleshooting and electroacoustic evaluation of the sensory device in compliance with existing or proposed standards

9f. Skill in implementing the use of sensory devices

9g. Skill in working with families and teaching them to appropriately monitor the various sensory devices

10.0 Role: Maximizing Auditory Potential

Proficient In:

10.1 Determining a child's potential use of residual hearing

10.2 Determining the benefit afforded a child by the sensory device

10.3 Determining the effects of different listening conditions on the use of residual hearing

10.4 Determining the auditory areas in which skills can be improved

10.5 Developing and implementing an appropriate management program to address those areas

10.6 Respecting the families' values and choices regarding the use of residual hearing

Knowledge and Skills Needed:

10a. Those persons who provide aural rehabilitation services should meet competencies as outlined in Definition and Competencies for Aural Rehabilitation (ASHA, 1984b)

10b. Knowledge of the sequence of auditory development and skill in integrating those processes into training

10c. Knowledge of the potential effects of a child's hearing loss on the use of residual hearing

10d. Knowledge of potential effects of sensory devices on the use of residual hearing

10e. Knowledge of the effects of room acoustics on the use of residual hearing

10f. Knowledge of integrating auditory and visual information for speech perception

10g. Skill in interpreting aided test results with respect to acoustic cues of speech

11.0 Role: Facilitating Communication Development

Proficient In:

11.1 Providing intervention in the child's primary language and mode of communication

11.2 Determining the child's strengths with respect to communication

11.3 Facilitating family understanding of language and communication options and assisting the family in selecting an appropriate approach for their child

11.4 Implementing a language/communication approach that is appropriate for the child and supported by the family

11.5 Implementing an appropriate communication intervention program for the child and the family

11.6 Facilitating access to adult and peer communication in the child's primary language and communication mode

11.7 Using the communication modality and primary language of the child and/or family

Knowledge and Skills Needed:

11a. Knowledge of language acquisition

11b. Knowledge of the potential effects of hearing loss on language acquisition

11c. Skill in determining the potential effects of hearing loss for the particular child

11d. Knowledge of various language/communication approaches appropriate for individuals who are deaf and hard of hearing

11e. Skill in separating the effects of hearing loss from those language differences not related to hearing

11f. Skill in facilitating caretaker/parent and child interactions

11g. Skill in the techniques for facilitating spoken and sign language acquisition for children 0-36-month-old children who are deaf and hard of hearing

12.0 Role: Facilitating cognitive development

Proficient In:

12.1 Assisting families to develop ways to foster cognitive development of 0-36-month-old children who are deaf and hard of hearing

Knowledge and Skills Needed:

12a. Knowledge of normal cognitive development

12b. Knowledge of the possible effects of hearing loss on language acquisition

12c. Knowledge of the difference between and the interaction of cognition and language

12d. Skill in separating the effects of language problems related to hearing loss from those related to cognitive problems

Summary and Conclusions

Since positive family-child relationships are initially established during the first 3 years, it is imperative that service providers focus their efforts on the family unit, as well as on the child. The Individuals with Disabilities Education Act - Part H, as amended (IDEA - Part H) supports this concept and has mandated development of an IFSP for each infant and toddler and his or her family eligible for early intervention services.

The confirmed diagnosis of hearing loss for a child may have long-term effects on the family. Usually children who are deaf or hard of hearing are born into families with normal-hearing parents and siblings who have limited knowledge of the implications of hearing loss. In addition, parents may go through stages of grieving after learning that their child is deaf or hard of hearing (Luterman, 1979; Moses, 1985). Early experiences with adults who are deaf or hard of hearing parents who have deaf or hard of hearing children and other support services are essential.

The effects of hearing loss on communication may interfere with parent-child interaction, especially when the primary communication system of the child and family are different.

The following areas are those in which a family may benefit from consultation, information, and education:

1. Immediate and easy access to a professional who can help them understand the hearing loss and its potential effects, both long and short term

2. Immediate and ongoing access to deaf and hard of hearing adults and children and their families

3. Immediate and ongoing access to professionals who can help facilitate the development of effective parent-child interaction

4. Immediate and easy access to a professional who can provide information, education and emotional support to families

5. Ongoing access to broad-based informational programs that enable families to become more familiar with hearing loss, assessment, sensory devices, communication techniques, management, educational options, and deaf community resources

Professionals providing services to families of children who are deaf and hard of hearing can facilitate parents' and caregivers' acquisition of knowledge regarding their child's short-and long-term needs by working with families to do the following:

1. Plan and implement assessment and management as early as possible

2. Develop an IFSP that will enable the family to assist the child in reaching his/her full potential

3. Understand the potential effects of hearing loss in the context of the individual abilities and differences

4. Foster knowledge of legal rights as provided by federal legislation/regulations (the Individuals with Disabilities Education Act - Part H, as amended (IDEA - Part H); Americans with Disabilities Act; Technology Assistance Act) and state legislation

5. Identify potential funding sources at the federal, state, and local levels to assist with assessment and management of individuals who are deaf and hard of hearing

6. Provide information regarding procedures for accessing programs offered by governmental and private agencies

7. Understand the family/caregiver's crucial role in developing an appropriate family service plan and becoming their child's primary advocate

References

American Speech-Language-Hearing Association. (1984a, May). Definition and competencies for aural rehabilitation. Asha, 26, 37-41.

American Speech-Language-Hearing Association. (1984b, May). Guidelines for graduate training in amplification. Asha, 26, 46.

American Speech-Language-Hearing Association. (1989, March). Audiologic screening of newborn infants who are at risk for hearing impairment. Asha, 31, 89-92.

American Speech-Language-Hearing Association. (1991, March). Guidelines for the audiologic assessment of children from birth through thirty-six months of age. Asha, 33, (Suppl. 5), 37-43.

Bess, F. (Ed.). (1988). Hearing impairment in children. Parkton, MD: York Press.

Brackett, D. (1990). Communication assessment. In M. Ross, D. Brackett, & A.B. Maxon (Eds.), Assessment and management of hearing-impaired children: Principles and practices. Austin, TX: Pro-Ed.

Diefendorf, A. (1988). Behavioral evaluation of hearing-impaired children. In F. Bess (Ed.), Hearing impairment in children (pp. 133-151). Parkton, MD: York Press.

Early intervention program for infants and toddlers with handicaps; final regulations. (1989). Federal Register, 54 (119); 26306-26348.

Geers, A., & Moog, J. (1987). Predicting spoken language acquisition of profoundly hearing-impaired children. JSHD, 52, 84-94.

Gravel, J. (1989). Assessing auditory system integrity in high risk infants and young children. Seminars in Hearing, 10.

Joint Committee on Infant Hearing. (1994). *1994 draft position statement*. (Publication pending final review).

Luterman, D. (1979). Counseling parents of hearing-impaired children, Boston, MA: Little, Brown and Company.

Martin, F. (Ed.). (1987). Hearing disorders in children. Austin, TX: Pro-Ed.

Moeller, M., Osberger, M.J., & Mortord, J. (1987). Speech-language assessment and intervention with preschool hearing-impaired children. In J. Alpiner & P. McCarthy (Eds.), Rehabilitative audiology; Children and adults (pp. 163-187). Baltimore, MD: Williams and Wilkins.

Appendix F

OSERS Policy Guidance:
Appropriate Educational Services
to Students Who Are Deaf

Text of guidance published in the Federal Register at 57 Fed. Reg 49274, October 30, 1992: Deaf Students Education Services; Policy Guidance; Notice

4000-01

DEPARTMENT OF EDUCATION

AGENCY: Department of Education

ACTION: Notice of Policy Guidance

SUMMARY: The Department provides additional guidance about Part B of the Individuals with Disabilities Education Act (IDEA) and Section 504 of the Rehabilitation Act of 1973 (Section 504) as they relate to the provision of appropriate education services to students who are deaf. This guidance is issued in response to concerns regarding Departmental policy on the provision of a free appropriate public education (FAPE) to students who are deaf. Many of these concerns were expressed in the report of the Commission on Education of the Deaf. This guidance is intended to furnish State and local education agency personnel with background information and specific steps that will help to ensure that children and youth who are deaf are provided with a free appropriate public education. It also describes procedural safeguards that ensure parents are knowledgeable about their rights and about placement decisions made by public agencies.

FOR FURTHER INFORMATION CONTACT: Jean Peelen or Parma Yarkin, U.S. Department of Education, 400 Maryland Avenue, S.W., Rooms 5046 and 3131, Switzer Building, respectively, Washington, D.C. 20202-2524. Telephone: (202) 205-8637 and (202) 205-8723, respectively. Deaf and hearing impaired individuals may call (202) 205-8449 or (202) 205-8723, respectively, for TDD services.

SUPPLEMENTARY INFORMATION:

Background

In the past twenty-five years, two national panels have concluded that the education of deaf students must be improved in order to meet their unique communication and related needs. The most recent of these panels, the Commission on Education of the Deaf (COED), recommended a number of changes in the way the Federal government supports the education of individuals who are deaf from birth through postsecondary schooling and training. With this notice, the Secretary implements several COED recommendations relating to the provision of appropriate education for elementary and secondary students who are deaf.

The COED's report and its primary finding[1] reflect a fundamental concern within much of the deaf community that students who are deaf have significant obstacles to overcome in order to have access

[1] "The present status of education for persons who are deaf in the United States is unsatisfactory. Unacceptably so. This is the primary and inescapable conclusion of the Commission on Education of the Deaf." Commission on Education of the Deaf: Toward Equality: Education of the Deaf. (February 1988)

to a free appropriate public education that meets their unique educational needs, particularly their communication and related needs.[2]

The disability of deafness often results in significant and unique educational needs for the individual child. The major barriers to learning associated with deafness relate to language and communication, which, in turn, profoundly affect most aspects of the educational process. For example, acquiring basic English language skills is a tremendous challenge for most students who are deaf. While the Department and others are supporting research activities in the area of language acquisition for children who are deaf, effective methods of instruction that can be implemented in a variety of educational settings are still not available. The reading skills of deaf children reflect perhaps the most momentous and dismal effects of the disability and of the education system's struggle to effectively teach deaf children: hearing impaired students "level off" in their reading comprehension achievement at about the third grade level.[3]

Compounding the manifest educational considerations, the communication nature of the disability is inherently isolating, with considerable effect on the interaction with peers and teachers that make up the educational process. This interaction, for the purpose of transmitting knowledge and developing the child's self-esteem and identity, is dependent upon direct communication. Yet, communication is the area most hampered between a deaf child and his or her hearing peers and teachers. Even the availability of interpreter services in the educational setting may not address deaf children's needs for direct and meaningful communication with peers and teachers.

Because deafness is a low incidence disability, there is not widespread understanding of its educational implications, even among special educators. This lack of knowledge and skills in our education system contributes to the already substantial barriers to deaf students in receiving appropriate educational services.

In light of all these factors, the Secretary believes that it is important to provide additional guidance to State and local education agencies to ensure that the needs of students who are deaf are appropriately identified and met, and that placement decisions for students who are deaf meet the standards of the applicable statutes and their implementing regulations. It is the purpose of this document to (1) clarify the free appropriate public education provisions of IDEA for children who are deaf, including important factors in the determination of appropriate education for such children and the requirement that education be provided in the least restrictive environment, and (2) clarify the applicability of the procedural safeguards in placement decisions.

Nothing in this notice alters a public agency's obligation to place a student with a disability in a regular classroom if FAPE can be provided in that setting.

---

[2] As stated in the IDEA, the purpose of the Act is:

> . . . to assure that all children with disabilities have available to them . . . a free appropriate public education which emphasizes special education and related services designed to meet their unique needs . . . .
>
> 20 U.S.C. sec. 1400(c).

In addition, the Section 504 regulations state:

> A recipient [of federal financial assistance] that operates a public elementary or secondary education program shall provide a free appropriate public education to each qualified handicapped person . . . regardless of the nature or severity of the person's handicap.
>
> 34 CFR §104.33(a)

[3] Thomas E. Allen, "Patterns of Academic Achievement Among Hearing Impaired Students: 1974 and 1983," in Deaf Children in America 162-164 (Arthur N. Schildroth and Michael A. Karchmer, eds. San Diego: College-Hill Press (1986))

Free Appropriate Public Education

The provision of a free appropriate public education based on the unique needs of the child is at the heart of the IDEA. Similarly, the Section 504 regulation at 34 CFR §104.33-104.36 contains free appropriate public education requirements, which are also applicable to local educational agencies serving children who are deaf. A child is receiving an appropriate education when all of the requirements in the statute and the regulations are met. The Secretary believes that full consideration of the unique needs of a child who is deaf will help to ensure the provision of an appropriate education. For children who are eligible under Part B of the IDEA, this is accomplished through the IEP process. For children determined to be handicapped under Section 504, implementation of an individualized education program developed in accordance with Part B of the IDEA is one means of meeting the free appropriate public education requirements of the Section 504 regulations.

As part of the process of developing an individualized education program (IEP) for a child with disabilities under the IDEA, State and local education agencies must comply with the evaluation and placement regulations at 34 CFR §300.530-300.534. In meeting the individual education needs of children who are deaf under Section 504, LEAs must comply with the evaluation and placement requirements of 34 CFR §104.35 of the Section 504 regulation, which contain requirements similar to those of the IDEA. However, the Secretary believes that the unique communication and related needs of many children who are deaf have not been adequately considered in the development of their IEP's. To assist public agencies in carrying out their responsibilities for children who are deaf, the Department provides the following guidance.

The Secretary believes it is important that State and local education agencies, in developing an IEP for a child who is deaf, take into consideration such factors as:

1. **communication needs and the child's and family's preferred mode of communication;**
2. **linguistic needs**;
3. **severity of hearing loss and potential for using residual hearing;**
4. **academic level;** and
5. **social, emotional, and cultural needs, including opportunities for peer interactions and communication.**

In addition, the particular needs of an individual child may require the consideration of additional factors. For example, the nature and severity of some children's needs will require the consideration of curriculum content and method of curriculum delivery in determining how those needs can be met. Including evaluators who are knowledgeable about these specific factors as part of the multidisciplinary team evaluating the student will help ensure that the deaf student's needs are correctly identified.

Under the least restrictive environment (LRE) provision of IDEA, public agencies must establish procedures to ensure that "to the maximum extent appropriate, children with disabilities, including children in public or private institutions or other care facilities, are educated with children who are not disabled, and that special classes, separate schooling, or other removal of children with disabilities from the regular educational environment occurs only when the nature or severity of the disability is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily."[4] The section 504 regulation at 34 CFR §104.34 contains a similar provision.

The Secretary is concerned that the least restrictive environment provisions of the IDEA and Section 504 are being interpreted, incorrectly, to require the placement of some children who are deaf

---

[4] 20 U.S.C. sec. 1412(5)(B).

in programs that may not meet the individual student's educational needs. Meeting the unique communication and related needs of a student who is deaf is a fundamental part of providing a free appropriate public education (FAPE) to the child. Any setting, including a regular classroom, that prevents a child who is deaf from receiving an appropriate education that meets his or her needs, including communication needs, is not the LRE for that individual child.

Placement decisions must be based on the child's IEP. [5] Thus, the consideration of LRE as part of the placement decision must always be in the context of the LRE in which appropriate services can be provided. Any setting which does not meet the communication and related needs of a child who is deaf, and therefore does not allow for the provision of FAPE, cannot be considered the LRE for that child. The provision of FAPE is paramount, and the individual placement determination about LRE is to be considered within the context of FAPE.

The Secretary is concerned that some public agencies have misapplied the LRE provision by presuming that placements in or closer to the regular classroom are required for children who are deaf, without taking into consideration the range of communication and related needs that must be addressed in order to provide appropriate services. The Secretary recognizes that the regular classroom is an appropriate placement for some children who are deaf, but for others it is not. The decision as to what placement will provide FAPE for an individual deaf child -- which includes a determination as to the LRE in which appropriate services can be made available to the child -- must be made only after a full and complete IEP has been developed that addresses the full range of the child's needs.

The Secretary believes that consideration of the factors mentioned above will assist placement teams in identifying the needs of children who are deaf and will enable them to place children in the least restrictive environment appropriate to their needs.

The overriding rule regarding placement is that placement decisions must be made on an individual basis.[6] As in previous policy guidance, the Secretary emphasizes that placement decisions may not be based on category of disability, the configuration of the delivery system, the availability of educational or related services, availability of space, or administrative convenience.

States and school districts also are advised that the potential harmful effect of the placement on the deaf child or the quality of services he or she needs must be considered in determining the LRE.

The Secretary recognizes that regular educational settings are appropriate and adaptable to meet the unique needs of particular children who are deaf. For others, a center or special school may be the least restrictive environment in which the child's unique needs can be met. A full range of alternative placements as described at 34 CFR §300.551(a) and (b)(1) of the IDEA regulations must be available to the extent necessary to implement each child's IEP. There are cases when the nature of the disability and the individual child's needs dictate a specialized setting that provides structured curriculum or special methods of teaching. Just as placement in the regular educational setting is required when it is appropriate for the unique needs of a child who is deaf, so is removal from the regular educational setting required when the child's needs cannot be met in that setting with the use of supplementary aids and services.

---

[5] 20 U.S.C. sec. 1401(18); see also 34 CFR §300.552(a)(2), and 34 CFR §104.33(b)(2).

[6] 34 CFR §300.552 Comment. See also Appendix A to 34 CFR Part 104 at §24.

Procedural Safeguards

One important purpose of the procedural safeguards required under Part B and the Section 504 regulations is to ensure that parents are knowledgeable about their rights and about important decisions that public agencies make, such as placement decisions. Under the Section 504 regulations at 34 CFR §104.36, a public agency must establish a system of procedural safeguards that includes, among other requirements, notice to parents with respect to placement decisions. Compliance with the Part B procedural safeguards is one means of meeting the requirements of the Section 504 regulations. Under Part B, before a child is initially placed in special education the child's parents must be given written notice and must consent to the placement. The Part B regulations at 34 CFR §300.500(a) provide that consent means that parents have been fully informed of all information relevant to the placement decision. The obligation to fully inform parents includes informing the parents that the public agency is required to have a full continuum of placement options available to meet the needs of children with disabilities, including instruction in regular classes, special classes, special schools, home instruction, and instruction in hospitals and institutions. The Part B regulations at 34 CFR §§300.504-300.505 also require that parents must be given written notice a reasonable time before a public agency proposes to initiate or change the identification, evaluation, educational placement or provision of a free appropriate public education to the child. This notice to parents must include a description of the action proposed or refused by the agency, an explanation of why the agency proposes or refuses to take the action, and a description of any options the agency considered and the reasons why those options were rejected. The requirement to provide a description of any option considered includes a description of the types of placements that were actually considered, e.g., special school or regular class, as well as any specific schools that were actually considered and the reasons why these placement options were rejected. Providing this kind of information to parents will enable them to play a more knowledgeable and informed role in the education of their children.

Authority: 20 U.S.C. 1411-1420; 29 U.S.C. 794.
Dated:

Lamar Alexander,
Secretary

Appendix G

Guidelines for Audiology Services in the Schools

Guidelines for Audiology Services in the Schools

Ad Hoc Committee on Service Delivery in the Schools
American Speech-Language-Hearing Association

These guidelines are an official statement of the American Speech-Language-Hearing Association (ASHA). They provide guidance on the role of the audiologist in school settings, but are not official standards of the Association. These guidelines were prepared by the ASHA Ad Hoc Committee on Service Delivery in the Schools: Frances K. Block, chair; Arnie Arniot, ex officio; Cheryl Deconde Johnson; Gina E. Nimmo; Peggy G. Von Almen; Deborah W. White; and Sara Hodge Zeno. Diane L. Eger, 1991–1993 vice president for professional practices, served as monitoring vice president. These guidelines supersede the guidelines titled "Audiology Programs in Educational Settings for Hearing Impaired Children," Asha, May 1976, pages 291–294 and "Audiology Services in the Schools," Asha, May, 1983, pages 53–60.

Contents

I. Introduction
II. Characteristics and Needs of Children With Hearing Impairments
  A. Incidence and Types of Hearing Impairment
  B. Effects of Hearing Impairment
  C. Service and Program Needs for Children With Hearing Impairments
III. Roles and Responsibilities of the Audiologist
IV. Delivery of Audiology Services
  A. Service Delivery Models
  B. Model Selection Considerations
  C. Caseload
V. Preservice Training and Certification
VI. Summary

Introduction

It has long been recognized that hearing loss affects a child's ability to learn language and achieve academically. Although the effects of hearing loss are variable, depending upon several factors, including the nature and degree of the loss, it is essential that children with hearing impairments be provided comprehensive audiological services to reduce the possible negative effects of the loss and to maximize their auditory learning and communication skills. Furthermore, all children can benefit from audiological services through the development of listening skills and the provision of adequate acoustic environments.

Federal legislation continues to refine the responsibilities of public education for children with disabilities (PL 93–112, Rehabilitation Act of 1973, Section 504, 1973; PL 94–142, Education of All Handicapped Act, 1975; PL 99–457, Education of the Handicapped Act Amendments, 1986; PL 100–407, Technology Related Assistance for Individuals with Disabilities Act, 1988; PL 101–336, Americans with Disabilities Act, 1990; and PL 101–497, Education of the Handicapped Act Amendments, now known as IDEA—Individuals with Disabilities Education Act, 1990). Together these legislative mandates require access to a free and appropriate education (FAPE) for all children with disabilities.

The role of the audiologist in the schools is clearly defined in the Regulations for the Education of All Handicapped Act (PL 94–142), Section 34 CFR 300.13 (b). These regulations were written in 1975 and re-authorized in 1990 without any modification in the definition of audiology. As defined then,

(1) "Audiology" includes:

(i) Identification of children with hearing loss; (ii) Determination of the range, nature, and degree of hearing loss, including referral for medical or other professional attention for the habilitation of hearing; (iii) Provision of habilitative activities, such as language habilitation, auditory training, speech reading (lipreading), hearing evaluation, and speech conservation; (iv) Creation and administration of programs for prevention of hearing loss; (v) Counseling and guidance of pupils, parents, and teachers regarding hearing loss; and (vi) Determination of the child's need for group and individual amplification, selecting and fitting an appropriate aid, and evaluating the effectiveness of amplification.

The same regulations (34 CFR 300.303) also require that "Each public agency shall insure that the hearing aids

Reference this material as follows:

American Speech-Language-Hearing Association. (1993). Guidelines for audiology services in the schools. *Asha, 35.* (Suppl. 10), pp. 24–32.

worn by deaf and hard of hearing children in school are functioning properly.

Concurrently with the development of these federal mandates, research continues to document the high incidence of hearing loss in school-age children and the negative consequences of all degrees of hearing impairment for psychoeducational and communication development (Berg, 1986; Commission on Education of the Deaf, 1988; Davis, Elfenbein, Schum, & Bentler, 1986; Davis, 1988; Levitt & McGarr, 1988; Matkin, 1986; Wray, Hazleh, & Flexer, 1988). In addition, the importance of the listening environment for children with hearing impairments is now well understood; assistive listening technology has grown; and strategies for selecting, fitting, and evaluating amplification have become more sophisticated (Hawkins, 1988; Levitt, 1985; Musket, 1988).

The foregoing can be summarized as follows:

- Audition is essential to learning for all children; language development and educational achievement are particularly affected when children have unidentified or unmanaged hearing impairments.
- The potential negative impact of mild, fluctuating, and unilateral losses in children is greater than was recognized in the past.
- To ensure optimal use of residual hearing, audiological services must be provided as early in life as possible and be available in the environment in which the child develops and learns. Therefore, certain auditory management services must be delivered in the home and/or the school and be designed to meet the specific needs of the children involved.
- Although private sector audiologists play an important role in the evaluation and management of childhood hearing loss, without provision of direct services in the school environment they cannot be expected to provide the range of services necessary to meet the multifaceted auditory management needs of children with hearing impairments.
- Related and support services are necessary to address the hearing impairments of all but a few of these children. Such services should be sought through appropriate referral and follow-up from other specialists when warranted.
- Audiological services must be provided by personnel who demonstrate the necessary competencies and appropriate American Speech-Language-Hearing Association (ASHA) certification.
- Audiological and educational services delivered must comply with the letter and intent of state and federal mandates.

ASHA addressed the role of the audiologist in the schools in its 1983 position statement "Audiology Services in the Schools." Despite the federal regulations and the ASHA guidelines, there continues to be significant variability in the interpretation of these documents and the provision of services. A recent survey of state departments of education (DeConde-Johnson, 1991) substantiated the discrepancy between states and within individual local education agencies in the level of audiology services provided.

The purpose of these guidelines is to provide audiologists and state and local education agencies with recommendations for appropriate cost-effective audiology services in the schools. Information on the following will be provided:

- the characteristics and needs of children with hearing impairments
- the role and function of audiologists in meeting these needs
- the most common delivery models for providing audiology services in the schools, including recommendations for caseload size
- preservice training and certification for audiologists in educational settings.

Characteristics and Needs of Children With Hearing Impairments

Although it is well-recognized that hearing is critical to speech-language development, communication, and learning, the complexity of the effects of hearing impairment is not always well understood. A child with hearing impairment suffers both from sensory deprivation and from the effects this deprivation has on communication and learning. Therefore, the effective management of hearing impairment must address medical, communicative, educational, and psychosocial considerations.

Incidence and Types of Hearing Impairment

Although demographic data is difficult to interpret, recent figures suggest that the prevalence of hearing impairment in children from birth to 18 years is as high as 5% (U.S. Department of Health and Human Services, 1991). Berg (1986) and Lundeen (1991) have estimated that among every 1,000 school-age students in the United States, 7 have bilateral and 16 to 19 have unilateral hearing losses that are potentially educationally significant. Included in this number are children with sensorineural hearing losses, as well as children with middle ear infections resulting in conductive hearing losses greater than 25dB. There are many more children who have minimal or fluctuating hearing losses due to otitis media. The incidence of hearing loss in special education students is also higher than in the general school population. In addition, there are a significant number of children who have central auditory processing problems. Children with hearing impairments continue to be an underidentified and underserved population. (Berg, 1986; Bess, 1985; Flexer, Wray, & Ireland, 1989; Matkin, 1988).

The most common cause of hearing loss in young children is otitis media, which may result in a conductive hearing impairment. Usually, conductive hearing loss is amenable to medical treatment. Although otitis media is most frequent during the first 3 years of life (Klein, 1986), conductive hearing loss associated with otitis media often continues until the age of 8 to 10 (Stelmachowicz, Davis, Gorga & Shepard, 1981). Conductive hearing loss is usually not severe in degree, ranging in the slight-to-moderate range. However, it may result in significantly delayed speech, language, and academic skills (Holm & Kunze, 1969; Menyuk, 1986; Needleman, 1977; Teele, Klein, Rosner, & The Greater Boston Otitis Media Study Group, 1984; Zinkus, 1986), because it most often occurs during the early critical learning period.

Sensorineural hearing loss is caused by a variety of illnesses and conditions. It is usually permanent and has a total incidence of at least 10 per 1,000 students. It has been estimated that there are seven times as many students with mild or moderate sensorineural hearing losses as with severe to profound sensorineural hearing losses. Many of these mild to moderate losses are not identified

until school entry, and the impact of these losses is often not understood. Sensorineural hearing loss may occur in one or both ears: only recently have the problems caused by unilateral hearing loss been recognized (Bess, 1986). Sensorineural hearing loss can occur at any time, but its prevalence is approximately equal across age groups of children and adolescents. Sensorineural loss in the high frequencies increases dramatically with age and is becoming more common in secondary students because of their exposure to noise (Lass, Woodford, Lundeen, Lundeen, & Everly-Myers, 1986; Montgomery & Fujikawa, 1992; Davis, Shepard, Gorga, Davis, & Stelmachowicz, 1981). The effects of sensorineural loss on language, learning, and psychosocial functioning are usually greater as the degree of hearing loss increases.

When conductive and sensorineural hearing loss are present simultaneously, the resulting loss is called "mixed." In addition to the types of losses mentioned above, many children exhibit central auditory processing problems, the cause and exact nature of which are largely unknown. Children with this type of auditory problem have normal hearing sensitivity but may have deficits in auditory attention, memory, sequencing, and listening when there is background noise.

Hearing loss may occur alone or in combination with other disabilities. The higher incidence of at-risk infants and the presence of other disabilities increase the probability that hearing loss also will occur. Children with language and learning disorders have an increased incidence of hearing loss as well.

Effects of Hearing Impairment

The earlier that hearing impairment occurs in the child's life, the more serious the effects upon the child's development. Similarly, the earlier the problem is identified and the intervention begun, the less serious the ultimate impact.

Children with mild or moderate hearing losses are often identified late because they seem to hear and develop socially adequate speech and language. Speech is audible to them, but, depending upon the configuration of the hearing loss, parts of words or sentences may not be heard. Therefore, it is often difficult for these children to understand what they hear. A sentence may be audible, but not intelligible. Background noise and distance from the person speaking further impair the child's ability to understand speech.

There are four major ways in which hearing loss affects children:

- It causes delay in the development of receptive and expressive communication skills (speech and language).
- The language deficit causes learning problems that result in reduced academic achievement.
- Communication difficulties often lead to social isolation and poor self concept.
- It may have an impact on vocational choices.

These four problems significantly affect the lives of children. While the magnitude of the educational impact of a hearing loss will vary for each individual child, the language, academic, and psychosocial functioning of children with hearing impairments share several common characteristics, which are summarized below.

- **Vocabulary**
  - ▶ Vocabulary develops more slowly than normal in children with hearing impairments.
  - ▶ Children with hearing impairments learn concrete words (*cat, jump, five, red*) more easily than abstract ones (*before, after, equal to,* or *jealous*). Function words (*the, is, are*) are also misused frequently.
  - ▶ The gap between the vocabulary of children with normal hearing and those with hearing impairments widens with age. Children with hearing impairments do not catch up without intervention.
  - ▶ Children with hearing impairments have difficulty understanding the multiple meanings of words.
- **Sentence Structure**
  - ▶ Children with hearing impairments comprehend and produce shorter and more simple sentences than normal.
  - ▶ Children with hearing impairments often misunderstand spoken and written complex sentences (relative clause, passive voice).
  - ▶ Children with hearing impairments often cannot hear word endings, such as "-s" or "-ed," leading to misunderstandings and misuse of tense, pluralization, noun-verb agreement, and possessives.
- **Academic Achievement**
  - ▶ All areas of academic achievement are affected, especially reading and mathematical concepts.
  - ▶ Children with severe to profound hearing losses usually achieve skills no higher than the third- or fourth-grade level unless appropriate educational intervention occurs early.
  - ▶ Children with mild to moderate hearing losses, on the average, achieve from 1 to 4 grade levels lower than their peers with normal hearing unless appropriate management occurs.
  - ▶ The gap between children with normal hearing and those with hearing impairments usually widens as they progress through school.
  - ▶ The level of achievement is related to parental involvement and the quantity, quality, and timing of the support services children receive.
- **Psychosocial Functioning**
  - ▶ Children with severe to profound hearing impairments often report feeling isolated, friendless, and unhappy in school, particularly when their socialization with other children with hearing impairments is limited.
  - ▶ These social problems appear to be more prevalent in children with mild or moderate hearing losses than in those with severe to profound impairments.

Service and Program Needs for Children With Hearing Impairments

Minimizing the handicapping effects of hearing impairment depends upon early identification and intensive broad-based management of each child. To contribute effectively to this management process, audiologic services within the schools should include the following components:

Prevention. Information concerning methods of prevention, as well as causes and effects, of hearing loss needs to be provided to students, educational staff, and community members on an ongoing basis. This information may be integrated into the school curriculum, as well as take the form of class presentations, parent counseling, professional in-service training, and public information cam-

paigns. The prevention program must be closely tied to efforts aimed toward early identification and intervention.

Identification. An ongoing identification program, which allows for the periodic screening of all children between birth and 21 years of age, must be provided. Each year the identification program should provide screening for all children at specified ages or grade levels; all children referred for or placed in special education programs; all children referred by parents, teachers, and concerned third parties; and all children considered "at-risk" for hearing impairment, including students with a history of exposure to noise. The identification program may include the establishment of at-risk registries, developmental checklists, or pure tone and acoustic immittance screening programs. To be effective, the identification program must develop expedient lines of communication and referral between educators, families, and the medical community. Acoustic immittance screening should be provided for all children who are at-risk for middle-ear problems, particularly those under the age of 7. The identification program must be systematic and include complete follow-up procedures. It must be carried out by trained personnel and supervised by an audiologist with demonstrated expertise in this area.

Assessment. Ongoing assessment must be accomplished in order to provide information concerning the nature and extent of hearing impairment and its effect upon communicative function, educational performance, and psychosocial well-being. Multidisciplinary and multifaceted assessment to determine amplification, educational, communicative, and psychosocial needs must be completed for all children with hearing loss.

All children who fail screening and all children with known hearing impairments must have an audiologic assessment in order for appropriate treatment to be planned. Children considered for or placed in special education programs; children referred by parents, teachers, and concerned third parties; and children "at-risk" for hearing loss may have either an initial screening or be seen for an audiologic assessment, depending upon the circumstances and available resources. Appropriate audiologic assessment includes, but is not limited to:

- compiling and interpreting available audiometric information
- determining the need for further pre-assessment information, including otologic consultation
- administering, scoring, and interpreting a complete audiologic assessment, which shall include the following, as appropriate:
  - ▶ case history
  - ▶ otoscopic examination
  - ▶ acoustic immittance measurements
  - ▶ pure tone audiometry (air and bone conduction)
  - ▶ speech reception or detection threshold
  - ▶ word recognition (speech discrimination)
  - ▶ word recognition in noise
  - ▶ speech recognition in noise with both auditory and visual inputs
  - ▶ most comfortable loudness level
  - ▶ uncomfortable loudness level
  - ▶ special tests, including auditory brainstem response, otocoustic emissions, site of lesion, central auditory processing
  - ▶ modified test procedures, including behavior observation, visual reinforcement, and conditioned play audiometry
  - ▶ speechreading
- selecting, administering, scoring, and interpreting tests to determine the benefits of amplification (hearing aids, cochlear implants, and/or FM systems), which shall include the following, as appropriate:
  - ▶ speech audiometry (quiet and noise; auditory and auditory-visual)
  - ▶ functional-gain measurement
  - ▶ real-ear measurement
  - ▶ electroacoustic analysis
  - ▶ listening check and Ling five-sound speech test
  - ▶ auditory skill development measurements
- documenting the influence of the hearing loss on communication, learning, psychosocial adjustment, and adaptive behavior
- identifying co-existing factors that may require further evaluation
- referring for assessment and/or treatment, using both school and community resources as appropriate. These may include assessments related to cognitive, academic, visual, and motor skills; emotional status; selection of amplification; and vocational interest and aptitude. In addition, the need for financial assistance in the purchase of a hearing aid should be considered.

Habilitation and Instructional Services. Habilitation and instructional services must be provided for all children identified by a multidisciplinary team as needing such services. Efforts must be made to acquire and interpret information relative to communicative skills, cognitive abilities, motor functioning, social-emotional development, adaptive behavior, health history, and academic status. An Individualized Education Program (IEP) should be tailored to meet the needs of the child and the parents, and should address the academic and support services needed. Educational services may be provided through a number of delivery options, including, but not limited to, home intervention, consultation/collaboration, itinerant instruction, team teaching, resource special education, self-contained special education classes, and residential placement. When determining placements, opportunities for educational and social interaction with other children with hearing impairments, as well as with normal-hearing peers, should be considered.

The habilitative needs of children with hearing impairments encompass many broad and sometimes overlapping areas. Some of the needed services may be provided directly by audiologists, whereas others will be provided by other specialists, such as speech-language pathologists, teachers of the deaf and hard of hearing, psychologists, counselors, social workers, physical therapists, occupational therapists, nurses, or physicians. Some of the most important aspects of habilitation are

- medical treatment, when indicated;
- selection of appropriate amplification (hearing aid, cochlear implant, and/or FM system) at the earliest possible age;
- auditory skill development training;
- training in the use of hearing aids in various settings

(including use of amplification in noisy classrooms and social situations);

- structuring a successful learning environment, which includes teacher selection, optimal room acoustics, accessibility to information, and peer and teacher inservices;
- development and remediation of communication, including pragmatic, skills;
- training in the use of visual information to supplement auditory input;
- academic tutoring or specialized instruction;
- counseling; and
- facilitation of transitions between programs, levels, agencies, and vocational settings.

Training in the effective use of hearing is a primary consideration in intervention because such training directly affects the child's success or failure in other areas. Two factors contribute most to the successful use of residual hearing: (a) appropriate amplification that consistently works properly and (b) a favorable acoustic environment. Research indicates that many children who are good candidates for hearing aids still do not wear them (Elfenbein, Bentler, Davis, & Neibuhr, 1988; Karchmer & Kirwin, 1977; Lipscomb, Von Almen, & Blair, 1992; Davis, Shepard, Stelmachowicz, & Gorga, 1981). Furthermore, children's hearing aids often malfunction. Studies have shown that 50% of the hearing aids worn by children are functioning poorly at any given time (Elfenbein, Bentler, Davis, & Neibuhr, 1988; Gaeth & Lounsbury, 1966; Kemker, McConnell, Logan, & Green, 1979; Potts & Greenwood, 1983; Zink, 1972). These data strongly suggest that programs to monitor hearing aid performance and use which are mandated by PL 94–142, 34CFR 300.303, are essential to the effective management of children with hearing impairments.

Children with hearing impairments require a clear signal if they are to understand instructions, class discussions, and other spoken comments. Even when properly functioning hearing aids are worn, the high levels of noise and reverberation that exist in most classrooms reduce their effective use (Anderson, 1989; Crandell, 1991; Crum & Matkin, 1976; Finitzo-Hieber & Tillman, 1978; Leavitt, 1991). For this reason, noise sources must be eliminated or reduced. Classrooms present a particularly difficult listening situation. Therefore, it is typically necessary to use assistive listening devices that enhance signal-to-noise ratios, in addition to, or instead of, personal hearing aids, to ensure that the child receives the best possible auditory input. The complex interactions between noise, distance from the speaker, acoustic characteristics of the room, and type of amplification make simple recommendations for preferential seating inadequate to ensure good use of hearing in the classroom.

Follow-up and Monitoring. Follow-up services need to be provided as an ongoing and underlying aspect of each component of the hearing identification, conservation, and educational services program. These services include, but are not limited to, teacher consultation, parent and family counseling, monitoring of communicative function, monitoring of educational performance, monitoring of psychosocial needs, and monitoring the performance and effectiveness of individual and group amplification systems, as well as periodic detailed reassessment.

Equipment and Materials. Provision of adequate identification, evaluation, and audiological management services to children with hearing impairments requires access to the following equipment and materials:

- sound-treated test booth
- clinical audiometer with sound field capabilities
- portable acoustic immittance meter
- portable audiometer
- electroacoustic hearing aid analyzer
- otoscope
- sound-level meter
- visual reinforcement audiometry equipment and other instruments necessary for assessing young or difficult-to-test children
- earmold impression materials and modification equipment
- test materials for screening speech and language, evaluating speechreading, and evaluating auditory skills
- test materials for central auditory processing assessment
- loaner or demonstration hearing aids
- FM amplification systems or other assistive listening devices (sound field and personal)
- visual aids for in-service training
- battery testers, hearing aid stethoscopes, and earmold cleaning materials
- auditory, speechreading, speech-language, and communication instructional materials

Technical Assistance and Administrative Support. Although state departments of education have primary responsibility for ensuring that adequate and appropriate services are available within local education agencies, technical assistance for staff and program development should be actively sought from a variety of other sources, including local, state, and national professional organizations; university education and training programs; state departments of health; community speech and hearing centers; private providers of service; and equipment distributors and manufacturers. Such support is critical to maintaining up-to-date services and facilities. In addition, administrative mechanisms should be developed to ensure continuing fiscal support at a level sufficient to properly maintain both the services and the facilities.

Evaluation and Research. Program evaluation must be an on-going activity to ensure the efficacy of hearing identification, auditory management, educational services, and hearing conservation programs. Ongoing research into the best practices for delivering hearing and educational services is of utmost importance to education agencies and to the children served. In addition, the audiologist must participate in appropriate staff development activities relevant to current educational practices and trends.

Roles and Responsibilities of the Audiologist

Not only are the effects of hearing impairment multifaceted and complex, but identification and audiologic assessment techniques have become increasingly sophisticated. Unfortunately, the progress and emphasis on management and habilitation have not kept pace with advances in assessment.

In the past audiological services in the schools focused

primarily on identification audiometry and pure-tone testing, and the responsibility for providing these services was typically delegated to speech-language pathologists or school nurses. Services usually did not proceed beyond the screening level, and all failures were referred outside the educational setting. Referrals were most often medical, and follow-up was typically limited to that associated with treatment of the medical problem. In the absence of audiologists with educational expertise, the educational, communicative, and psychosocial aspects of hearing impairments may have been neglected.

The responsibility of the audiologist in the schools is finally evolving from a primary focus on identification to that of a consultant, team member, and case manager (Blair, Wilson-Vlotman, & Von Almen, 1989; English, 1991; Flexer, 1990; Flexer, Wray, & Ireland, 1989; Roush, 1991). Schools are beginning to realize the extent of the impact audiologists can have in the assessment and management of children with hearing impairments. Specifically, the audiologist is uniquely qualified to perform the following activities with children:

- provide community leadership to ensure that all infants, toddlers, and youth with impaired hearing are promptly identified, evaluated, and provided with appropriate intervention services
- collaborate with community resources to develop a high-risk registry and follow-up
- develop and supervise a hearing screening program for preschool and school-aged children
- train audiometric technicians or other appropriate personnel to screen for hearing loss
- perform follow-up comprehensive audiological evaluations
- assess central auditory function
- make appropriate referrals for further audiological, communication, educational, psychosocial, or medical assessment
- interpret audiological assessment results to other school personnel
- serve as a member of the educational team in the evaluation, planning, and placement process, to make recommendations regarding placement, related service needs, communication needs, and modification of classroom environments for students with hearing impairments or other auditory problems
- provide in-service training on hearing and hearing impairments and their implication to school personnel, children, and parents
- educate parents, children, and school personnel about hearing loss prevention
- make recommendations about use of hearing aids, cochlear implants, group and classroom amplification, and assistive listening devices
- ensure the proper fit and functioning of hearing aids, cochlear implants, group and classroom amplification, and assistive listening devices
- analyze classroom noise and acoustics and make recommendations for improving the listening environment
- manage the use and calibration of audiometric equipment
- collaborate with the school, parents, teachers, special support personnel, and relevant community agencies and professionals to ensure delivery of appropriate services
- make recommendations for assistive devices (radio/television, telephone, alerting, convenience) for students with hearing impairment
- provide services, including home programming if appropriate, in the areas of speechreading, listening, communication strategies, use and care of amplification, including cochlear implants, and self-management of hearing needs

Because of the complex and variable nature of hearing impairment and its effects, children with hearing impairments are heterogeneous in nature. It is therefore imperative that individualized intervention plans for all children with hearing impairment be developed and implemented by a multidisciplinary team. In addition, the efforts of that team need to be guided by a complete understanding of the hearing impairment. This knowledge must, in turn, be coordinated with and integrated into on-going classroom instruction. Unfortunately, most school personnel are unfamiliar with the nature and specific effects of hearing impairment. The audiologist is the only educational team member with comprehensive knowledge about hearing impairments and their consequences. Therefore, audiologists provide an excellent resource for direct service, in-service activities, and public information efforts that can significantly enhance the intervention efforts of the educational team.

Delivery of Audiology Services

The audiologic needs of children with hearing impairments can be addressed through a variety of service delivery models. Implementation of a specific audiology service program will depend upon the administrative philosophy of individual state and local school systems and upon available resources. However, all states must ensure that local education agencies provide the essential service components necessary to meet state and federal education and civil rights statutes and regulations.

Audiology services may be provided directly by local or intermediate education agencies, may be contracted with private or public entities, or may be a combination of these two delivery models.[1] Factors to consider in the selection of a delivery model include the size and needs of the population to be served, qualifications of available personnel, equipment and facility resources, proximity and timeliness of available services, cost effectiveness, and liability factors. Substantial coordination, collaboration, and communication among the service provider, the school staff, and the family are critical to the provision of comprehensive services.

Service Delivery Models

School-Based Audiology Services. Audiology services that are school-based are directed or performed by audiologists employed by local or intermediate education agencies or residential programs. Although hearing screening may be delegated to support personnel or volunteers, the

[1]Whereas the 1980 Ad Hoc Committee on Extension of Audiological Services in the Schools described four delivery models for audiology services in the schools, these four models were essentially combinations of school-based and contracted audiology services.

audiologist is responsible for developing and supervising hearing identification and prevention programs, including participation with other community agencies for the early identification of hearing impairments. Audiologic assessment is performed by the school audiologist, and results are interpreted and shared directly with others involved in the child's educational program. Necessary referrals outside the school are made with parental consent, and the school audiologist acts as the liaison with physicians and other community professionals. The audiologist in the school is also responsible for the maintenance and calibration of audiological equipment, for recommending and monitoring hearing aids and assistive listening devices, and for evaluating and making recommendations regarding classroom acoustics. Additionally, the audiologist serves as a member of the educational team in the evaluation and Individualized Education Program (IEP) process. Because of the unique perspective the audiologist has as a result of involvement with children throughout their entire education, he or she may serve as the case manager. Along with the teacher of the deaf and hard of hearing and the speech-language pathologist, the audiologist plays an important role in the provision of habilitation services.

Contracted Audiology Services. Audiology services may be provided by school districts through contracts with a variety of sources, including private practitioners, clinics, medical facilities, or public agencies. The contract should specify the exact nature of the services to be provided, the name and credentials of the provider, when and how services will be provided, and the nature of the reporting and consultation requirements. The local or intermediate education agency has the responsibility for ensuring that comprehensive audiology services are delivered to the school population, and may contract for all audiology services or only for those it chooses not to provide directly. Equipment usually belongs to the provider identified in the contract.

Model Selection Considerations

Determination of the most effective service delivery model should be based upon considerations related to quality and comprehensiveness of the services, compliance with state and federal regulations, and cost effectiveness. The best alternative for an individual school district may be school-based audiology services, contracted audiology services, or a combination of both. Whatever the delivery model employed, efforts should be made to avoid unnecessary duplication of readily available services and facilities in the community.

School-based audiology services are often more comprehensive and efficient than contracted services, because services are provided directly by audiologists who have constant access to children and well-established daily communication with other educational personnel (Allard & Golden, 1991). Furthermore, audiologists who are employed by schools typically show a greater allegiance and investment by virtue of their employment setting.

Contracted services have the potential to be as effective as school-based services, but care must be taken to ensure that the contracts are not limited in the provision of comprehensive services. Additionally, services, reports, and records must comply with federal, state, and local education agency requirements. It is critical that contractees understand educational policies and procedures, in addition to the educational and communicative implications of a hearing loss in childhood. Staff development activities that pertain to associated educational issues should be included in all contracts. Limited contracts, such as those that provide only for clinical audiologic assessment and leave the school personnel responsible for the interpretation and use of test results in educational planning and remediation efforts, should be avoided.

Another factor in the consideration of a service delivery model is cost effectiveness. The cost of school-based audiology services includes the salaries and fringe benefits of audiology personnel and the purchase or contracting for use of necessary audiologic equipment and materials. The size and nature of the school population will determine the number of staff members and the equipment needed. Contracted services are provided on a fee-for-service basis, which may be calculated in terms of time involved or number of children for whom services are provided. With contracted services, the school is usually not responsible for providing equipment.

When contracted services are used, it is critical that the school's responsibility for assessment, hearing aids, and assistive listening equipment be differentiated from the parent's responsibility. This is necessary to avoid conflict-of-interest situations that arise when the same audiologist fulfills the school contract as well as the private audiology services in a community.

Caseload

To ensure that the identification, auditory management, educational, communication, and psychosocial needs of children with hearing impairments are not neglected, adequate numbers of audiologists must be available to provide services to children. Therefore, fiscal and administrative support must be sufficient to carry out the standards of practice recommended in these guidelines.

A ratio of one full-time audiologist for every 12,000 preschool through secondary students is recommended to provide comprehensive audiologic services. Factors that may reduce this ratio include:

- excessive travel time
- the number of children with hearing impairments
- the number of preschoolers and children with other disabilities
- the number of hearing aids and assistive listening devices in use
- the quantity of special tests provided, including central auditory processing
- the extent of equipment calibration and maintenance responsibilities
- the amount of direct habilitative services
- the extent of supervisory/administrative responsibilities

Preservice Training and Certification

To meet national professional standards established by the American Speech-Language-Hearing Association, audiologists must complete a graduate degree, complete at least 375 hours of supervised clinical practicum, pass a national examination in audiology, and complete a Clinical Fellowship Year under the supervision of a fully certified audiologist. When combined with training and experience in education, these requirements result in the qualifications necessary for audiologists to effectively complement the expertise of other school staff in providing for comprehen-

sive management of children with hearing impairments. In addition to the ASHA certification requirements and as part of graduate training, it is recommended that audiologists who wish to be employed in school settings complete a work experience in a school system under the supervision of a school audiologist and have knowledge and experience in the following areas:

- educational referral procedures and criteria
- multidisciplinary team evaluations, Individualized Educational Plan (IEP) and Individual Family Service Plan (IFSP) development, and placement procedures
- collaborative planning and problem solving with other educational professionals
- interpretation of educational assessments (academic, communication, cognitive, psychosocial, physical)
- legal foundations of regular and special education (current legislation, legal rights, due process)
- sign language systems
- use and modification of instructional materials and media
- development, execution, and supervision of school hearing screening programs
- familiarity with instructional curricula
- acoustic assessment and modifications of classrooms
- record keeping and reporting
- psychoeducational implications of childhood hearing loss
- in-service training and counseling techniques for teachers, parents, and peers
- training and supervision of support personnel
- case management/care coordination with family, school, and community services
- sensitivity to diversity and difficult issues

Summary

The educational needs of children with hearing impairments are the responsibility of local and state education agencies. Comprehensive audiology services to children include prevention, identification, assessment, habilitation and instructional services, supportive in-service and counseling, and follow-up and monitoring services. Audiology programs in schools must be supported by appropriate and adequate equipment and materials, technical assistance, administrative support, and evaluation and research. The needs of children with hearing impairments are diverse. Therefore, a team approach which includes the school audiologist is the only feasible way to ensure that they receive comprehensive services.

Services for children with hearing impairments are greatly enhanced when audiologists are on the educational team. The inclusion of audiologists makes possible the proper interpretation and integration of audiologic data into educational planning for programming. Audiologists bring critical and unique skills and knowledge to the educational setting, thus ensuring the maximal exploitation of residual hearing for auditory learning and communication. Audiology services can be obtained by employing audiologists within the schools or by contracting for their services. Regardless of the service delivery system used, adequate numbers of audiologists must be employed to provide appropriate and comprehensive audiology services to all children.

References

Allard, J., & Golden, F. (1991). Educational audiology: A comparison of service delivery systems utilized by Missouri schools. *Language, Speech, and Hearing Services in Schools, 22,* 5–11.

American Speech-Language-Hearing Association (1983, May). Audiology services in the schools position statement. *Asha, 25,* 53–60.

Anderson, K. (1989). Speech perception and the hard of hearing child. *Educational Audiology Monograph, 1,* 15–30.

Berg, F. S. (1986). Characteristics of the target population. In F. Berg, J. C. Blair, S. H. Viehweg, & A. Wilson-Vlotman (Eds.), *Educational audiology for the hard of hearing child* (pp. 1–2). New York: Grune & Stratton.

Berg, F., & Fletcher, S. (1970). *The hard of hearing child.* New York: Grune and Stratton.

Bess, F. H. (1985). The minimally hearing impaired child. *Ear and Hearing, 6,* 43–47.

Blair, J., Wilson-Vlotman, A., & Von Almen, P. (1989). Educational audiologist: Practices, problems, directions, and recommendations. *Educational Audiology Monograph, 1,* 1–14.

The Commission on Education of the Deaf (1988). *Toward equality: Education of the deaf.* Washington, DC: U.S. Government Printing Office.

Craig, H. A. (1965). Sociometric investigation of the self-concept of the deaf child. *American Annals of the Deaf, 110,* 456–478.

Crandell, C. (1991). Effects of classroom acoustics on children with normal hearing: Implications for intervention strategies. *Educational Audiology Monograph, 2,* 18–38.

Crum, M., & Matkin, N. (1976). Room acoustics: The forgotten variable? *Language, Speech and Hearing Services in Schools, 7,* 106–110.

Davis, J. (1974). Performance of young hearing-impaired children on a test of basic concepts. *Journal of Speech and Hearing Disorders, 17,* 342–351.

Davis, J., & Blasdell, R. (1975). Perceptual strategies employed by normal hearing and hearing-impaired children in the comprehension of sentences containing relative clauses. *Journal of Speech and Hearing Research, 18,* 281–295.

Davis, J., Shepard, N., Stelmachowicz, P., & Gorga, M. (1981). Characteristics of hearing-impaired children in the schools: Part I—Demographic data. *Journal of Speech and Hearing Disorders, 46,* 123–129.

Davis, J., Shepard, N., Stelmachowicz, P., & Gorga, M. (1981). Characteristics of hearing-impaired children in the schools: Part II—Psychoeducational data. *Journal of Speech and Hearing Disorders, 46,* 130–137.

Davis, J. M., Elfenbein, J., Schum, R., & Bentler, R. A. (1986). Effects of mild and moderate hearing impairments on language, educational, and psychological behavior of children. *Journal of Speech and Hearing Disorders, 51,* 53–62.

Davis, J. M. (1988). Management of the school age child: A psychosocial perspective. In F. H. Bess (Ed.), *Hearing impairment in children* (pp. 401–416). Parkton, MD: York Press.

DeConde-Johnson, C. (1991). The "state" of educational audiology: Survey results and goals for the future. *Educational Audiology Association Monograph, 2,* 74–84.

Eagles, E., Wishik, S., Doerfler, L., Melnick, W., & Levin, H. (1963). Hearing sensitivity and related factors in children. *Laryngoscope,* Special Monograph.

Education of All Handicapped Children (August 23, 1977). PL 94–142 Regulations. *Federal Register, 42*(163).

Elfenbein, J., Bentler, R., Davis, J., & Niebuhr, D. (1988). Status of school children's hearing aids relative to monitoring practices. *Ear and Hearing, 9,* 212–215.

English, K. (1991). Best practices in educational audiology. *Language, Speech, and Hearing Services in Schools, 22,* 283–286.

Finitzo-Hieber, T., & Tillman, T. (1978). Room acoustics effects on monosyllabic word discrimination ability for normal and hearing-impaired children. *Journal of Speech and Hearing Research, 21,* 440–458.

Flexer, C., Wray, D., & Ireland, J. (1989). Preferential seating is NOT enough: Issues in classroom management of hearing impaired students. *Language, Speech, and Hearing Services in Schools, 20,* 11–21.

Flexer, C. (1990, April). Audiological rehabilitation in the schools. *Asha, 32,* p. 44–45.

Gaeth, J., & Lounsbury, E. (1966). Hearing aids and children in elementary school. *Journal of Speech and Hearing Disorders, 31,* 283–289.

Garstecki, D. (1978, April). Survey of school audiologists. *Asha, 20,* 291–296.

Karchmer, M., & Kirwin, L. (1977). *The use of hearing aids by hearing-impaired students in the United States* (Office of Demographic Studies Report, Series S, Number 2). Washington, DC: Gallaudet College.

Kemker, F., McConnell, F., Logan, S., & Green, B. (1979). A field study of

161 BEST COPY AVAILABLE

children's hearing aids in a school environment. *Language, Speech, and Hearing Services in Schools, 10*, 47–53.
Klein, J. (1986). Risk factors for otitis media in children. In J. Kavanagh (Ed.), *Otitis media and child development* (pp. 45–51). Parkton, MD: York Press.
Kodman, F. (1963). Educational status of near deaf children in the classroom. *Journal of Speech and Hearing Disorders, 28*, 297–299.
Lass, N. J., Woodford, C. M., Lundeen, D. J., & Everly-Myers, D. S. (1986). The prevention of noise induced hearing loss in the school-age population: A school educational hearing conservation program. *Journal of Auditory Research, 26*, 247–254.
Levitt, H. (1985). Technology and education of the hearing impaired. In F. Powell, T. Finitzo-Hieber, S. Friel-Patti, & D. Henderson (Eds.), *Education of the hearing impaired child* (pp. 120–129). San Diego: College Hill Press.
Levitt, H., & McGarr, N. (1988). Speech and language development in hearing impaired children. In F. H. Bess (Ed.), *Hearing impairment in children* (pp. 375–388). Parkton, MD: York Press.
Leavitt, R. (1991). Group amplification systems for students with hearing impairments. *Seminars in Hearing, 12*(4), 380–388.
Ling, D. (1972). Rehabilitation of cases with deafness secondary to otitis media. In A. Glorig and K. Gerwin (Eds.), *Otitis media* (pp. 249–253). Springfield, Ill.: Charles C. Thomas.
Lipscomb, M., Von Almen, P., & Blair, J. (1992). Students as active participants in hearing aid maintenance. *Language, Speech, and Hearing Services in Schools, 23*, 202–213.
Lundeen, C. (1991). Prevalence of hearing impairment among children. *Language, Speech, and Hearing Services in Schools, 22*, 269–271.
Matkin, N. D. (1986). The role of hearing in language development. In J. F. Kavanagh (Ed.), *Otitis media and child development* (pp. 3–11). Parkton, MD: York Press.
Matkin, N. D. (1988). Re-evaluating our approach to evaluation: Demographics are changing — Are we? In F. H. Bess (Ed.), *Hearing impairment in children* (pp. 101–111). Parkton, MD: York Press.
McClure, W. (1969). Current problems and trends in the education of the deaf. *The Deaf American, 18*, 8–14.
Menyuk, P. (1986). Predicting speech and language problems with persistent otitis media. In J. Kavanagh (Ed.), *Otitis media and child development* (pp. 83–96). Parkton, MD: York Press.
Montgomery, J., & Fujikawa, S. (1992). Hearing thresholds of students in the second, eighth, and twelfth grades. *Language, Speech and Hearing Services in Schools, 23*, 61–63.
Muskett, C. (1988). Assistive listening devices and systems (ALDS) for the hearing impaired student. In R. Roesser & M. P. Downs (Eds.), *Auditory disorders in school children* (pp. 246–259). New York: Thieme Medical Publishers.
Needleman, H. (1977). Effects of hearing loss from early recurrent otitis media on speech and language development. In B. Jaffe (Ed.), *Hearing loss in children* (pp. 640–649). Baltimore: University Park Press.
Peterson, M. (1972). *Achievement of hard of hearing students in regular public schools*. Unpublished doctoral dissertation, Wayne State University.
Potts, P., & Greenwood, J. (1983). Hearing aid monitoring: Are looking and listening enough? *Language, Speech, and Hearing Services in Schools, 14*, 157–163.
Quigley, S., & Thomure, R. (1968). *Some effects of a hearing impairment on school performance*. Champaign, IL: Institute of Research on Exceptional Children, University of Illinois.
Reich, C., Hambleton, D., & Houltron, B. (1977). The integration of hearing-impaired children in regular classrooms. *American Annals of the Deaf, 122*, 534–543.
Ross, M., & Giolas, T. G. (1978). Auditory management of hearing-impaired children. Baltimore: University Park Press.
Roush, J. (1991, April). Expanding the audiologist's role. *Asha, 33*, 47–49.
Teele, D., Klein, J., Rosner, B., & The Greater Boston Otitis Media Study Group (1984). Otitis media with effusion during the first three years of life and development of speech and language. *Pediatrics, 74*, 282–287.
U.S. Department of Health and Human Services, Public Health Services (1991). *Healthy people 2000: National health promotion and disease prevention objectives*. DHHS Publication No. 91–50121. Washington, DC: U.S. Government Printing Office, Superintendent of Documents.
Wilcox, J., & Tobin, H. (1974). Linguistic performance of hard-of-hearing and normal-hearing children. *Journal of Speech and Hearing Research, 17*, 286–293.
Wray, D., Hazlett, J., & Flexer, C. (1988). Teaching writing skills to hearing impaired students. *Language, Speech, and Hearing Services in Schools, 19*, 182–190.
Zink, C. (1972). Hearing aids children wear: A longitudinal study of performance. *Volta Review, 74*, 41–51.
Zinkus, P. (1986). Perceptual and academic deficits related to early chronic otitis media. In J. Kavanagh (Ed.), *Otitis media and child development* (pp. 107–116). Parkton, MD: York Press.

Appendix H

Guidelines for Fitting and Monitoring FM Systems

Guidelines for Fitting and Monitoring FM Systems

Ad Hoc Committee on FM Systems and Auditory Trainers
American Speech-Language-Hearing Association

The Guidelines for Fitting and Monitoring FM Systems were developed by the American Speech-Language-Hearing Association (ASHA) Ad Hoc Committee on FM Systems and Auditory Trainers and adopted by the ASHA Legislative Council (LC 27–93) in November 1993. Members of the committee include Ruth A. Bentler, chair; Evelyn Cherow, ex officio; Joseph J. Curry; David B. Hawkins; Sherrin L.T. Massie; Jean Lovrinic, Vice President for Governmental and Social Policies, monitoring vice president; and Kimberly Parker-Bright. These guidelines are an official statement of the American Speech-Language-Hearing Association. They provide guidance on use of specific practice procedures but are not official standards of the Association.

Introduction

Frequency modulated (FM) systems/auditory trainers[1] have been standard equipment for children with hearing loss in educational settings for many years. The improvement of the signal-to-noise ratio in noisy and reverberant environments has been recognized as the primary advantage of FM use (Ross, 1992). Technological advances have widened the application of these devices. Use of FM systems has been reported for children and adults with hearing loss, as well as for persons with normal hearing who exhibit disorders of articulation, auditory processing and learning, and language (ASHA, 1991d; Bess, Klee, & Culbertson, 1986; Blake, Field, Foster, Platt, & Wertz, 1991; Cargill & Flexer, 1989; Loose, 1984; Pfeffer, 1992; Ross, 1992; Smith, McConnell, Walter, & Miller, 1985), although these guidelines do not address those latter applications. The availability and use of FM systems have increased as a result of Public Law 101–336, the Americans with Disabilities Act, and PL 101–476, the Individual with Disabilities Education Act (IDEA) and Section 504 of the Rehabilitation Act of 1973. All of these mandate access to technology for persons with hearing/communication deficits in order to reduce communication barriers.

The FM system has been shown to present approximately 15–20 dB greater intensity of the speech signal than background noise at the ear of the listener (Hawkins, 1984). The increase in the signal-to-noise ratio is needed to maximize auditory capabilities (especially speech understanding), language learning, and the resultant academic success for children (Ross & Giolas, 1971; Ross, Giolas, & Carver, 1973). Achieving the most effective use of residual hearing may best be accomplished when an FM system is considered early in the process of fitting amplification. In fact, consideration of the FM system as the primary amplification system rather than as a supplemental system has been suggested (Madell, 1992a, b; Maxon & Smaldino, 1991). Reported additional benefits of an improved signal-to-noise ratio include increased attention span, reduced distractibility, and increased sound awareness/discrimination (Blake et al., 1991; Casterline, Flexer, & DePompei, 1989; Flexer, 1989; Stach, Loisell, & Jerger, 1987).

Although FM systems are of potential benefit for many listeners in a variety of settings and applications, certain cautions/issues need to be considered:

1. Little regulatory consumer protection has been mandated because most states do not classify these devices as hearing aids.
2. FM systems are available commercially, and many are purchased without consultation with an audiologist.
3. The American National Standards Institute has not yet issued a standard for performance measurements of FM systems.
4. No guidelines are currently available for the selection, evaluation, and fitting of FM systems for persons with hearing loss or for use by persons with normal hearing.
5. Researchers have raised concerns regarding specific problems related to electroacoustic performance factors, for example, variability, nonlinearity, lack of stability, coupling and maintenance (Hawkins & Schum, 1985; Thibodeau, 1990; Thibodeau & Saucedo, 1991).
6. Candidacy, effectiveness of fit, cost and lifestyles, needs and aesthetics are important concerns and must be considered on an individual basis.

[1]FM systems are also called auditory trainers. Traditionally the term *auditory trainer* has been used to refer to hard-wired, FM, infrared, or any amplification system other than a personal hearing aid. Because of the ambiguous nature of the term, only *FM systems* will be used in this guidelines paper.

Reference this material as follows:

American Speech-Language-Hearing Association. (1994). Guidelines for fitting and monitoring FM systems. *Asha, 36* (March, Suppl. 12), pp. 1–9.

By addressing these issues as well as the benefits and limitations of FM systems, the audiologist facilitates their successful use.

Scope

This paper provides guidelines for fitting and monitoring of personal and self-contained FM systems for children and adults with hearing loss.[2] Included are preselection and management considerations for the use of FM systems, as well as recommended procedures for performance measurements. The appropriate personnel responsible for selecting, fitting, and monitoring are defined. The committee acknowledges the complexity and the continuing evolution of FM technology. In that it is not possible to consider every configuration of design and implementation, these guidelines are intentionally limited in scope. They supersede that portion of the Position Statement: Definitions and Competencies of Aural Rehabilitation, III., C., Evaluation of Personal and Group Amplification and Other Sensory Aids (ASHA, 1984).

Personnel

The audiologist is the professional who is uniquely qualified to select, evaluate, fit, and dispense FM systems. Section IIA of the ASHA Code of Ethics (ASHA, 1992) states that "Individuals shall engage in the provision of clinical services only when they hold the appropriate Certificate of Clinical Competence or when they are in the certification process and are supervised by an individual who holds the appropriate Certificate of Clinical Competence." IIB of the Code of Ethics further states that "Individuals shall engage in only those aspects of the profession that are within the scope of their competence, considering their level of education, training, and experience." In an "Issues in Ethics" statement (ASHA, 1991a) it was further clarified that "Services relating to evaluating, selecting, fitting, or dispensing hearing aids and other amplification devices shall be provided only by individuals who hold the CCC-A" (A.5). Daily monitoring checks by other personnel (including speech-language pathologists, teachers, etc.) are appropriate after such personnel have received instruction in monitoring techniques from a certified audiologist.

Preferred Practice Patterns for Professions of Speech-Language Pathology and Audiology (ASHA, 1993a), specifically 9.0 (Aural Rehabilitation), 10.0 (Product Dispensing), 11.0 (Product Repair/Modification), 25.0 (Hearing Aid Assessment), and 25.1 (Assistive Listening System/Device Selection), are consistent with these guidelines.

Other ASHA policies and reports have addressed the appropriateness of the audiologist as the professional qualified to select, evaluate, and fit amplification devices. They include Amplification as a Remediation Technique for Children With Normal Peripheral Hearing (ASHA, 1991b), The Use of FM Amplification Instruments for Infants and Preschool Children With Hearing Impairment (ASHA, 1991d), Scope of Practice: Speech-Language Pathology and Audiology (ASHA, 1990), Guidelines for Graduate Education in Amplification (ASHA, 1991c), and Guidelines for Audiology Services in the Schools (ASHA, 1993b). Federal regulations 34 FR Chapter II § 300.13 (*Federal Register*, 1992a) and 34 FR Chapter III § 303.12 (*Federal Register*, 1992b) further define and support the audiologist's role in the evaluation and habilitation of the population aged 0–21.

Preselection Considerations

Before selecting an FM system for personal use, it is necessary to assess the present level of receptive (auditory communication) function and to identify other factors related to device use. Implicit in the preliminary stages is determinating whether to use a personal FM system (coupled to one's own hearing aids) or a self-contained FM system (coupled directly to the ear). If a personal FM system is being considered, hearing aids should be chosen with appropriate coupling capabilities and flexibility to maximally interface with the FM system. For instance, the hearing aids should have strong telecoils, and direct audio input may be desirable as well. In addition, hearing aid switch options (such as M/T/MT) must be carefully considered so as to provide flexibility in listening arrangements. Alternatively, if a self-contained system is going to be used, appropriate decisions should be made relative to the necessary gain and output requirements for that listener.

Other factors to be considered in the preselection process include

- the person's ability to wear, adjust, and manage the device;
- support available in the educational setting (e.g., in-service to teachers, classmates);
- acceptance of the device;
- appropriate situations and/or settings for use;
- time schedule for use;
- compatibility with personal hearing aids and other audio sources as well as options for coupling;
- individual device characteristics and accessories;
- external source interference (e.g., pagers, radio stations, computers, etc.);
- cost and accessibility;
- legislative mandates.

Assessments may include, but are not limited to, audiological evaluations, observations of auditory performance in representative settings, consultations with the user or others knowledgeable of the user's performance, questionnaires and scales, hands-on demonstration, and a trial period.

The issue of potential damage to the auditory mechanism should be considered when fitting any assistive listening device. This is of special concern when considering the fitting of an FM system to a person with normal hearing or mild fluctuating hearing loss.

Management

1. Orientation

The subject's (and family's) ability to accept and use an FM system depends upon several factors, including but not limited to (a) a hands-on demonstration of the FM system and its types and components, and (b) the training of personnel (e.g., speech-language pathologists, teachers) in its appropriate use and troubleshooting.

A hands-on demonstration session provides the user and family an opportunity to assess the components of the FM

[2]Currently, one ear-level FM system is available. That system could be classified as a self-contained FM system, and the basic protocol outlined herein can be used. These guidelines were not intended to address selection, evaluation, fitting, and monitoring of sound-field systems.

system(s) as they relate to specific needs. This session serves to establish the user/family's role in (re)habilitation.

The audiologist is responsible for the training of individual(s) responsible for the use and maintenance of the FM system. As part of this training, the audiologist should ensure that the modes of use (i.e., FM only/FM plus environment/environment only) are understood by the user and family as well as the support personnel.

Trial periods and return policies vary by manufacturer and by state and local laws. Applicable policies should be investigated and discussed with the user and family. Research on the trial use of FM systems in the home with parents and toddlers (Benoit, 1989) and with college students (Flexer, Wray, Black, & Millin, 1987) suggests that acceptance and compliance may depend on the user's knowledge of how the system works in relation to the hearing loss and the perception that the benefits outweigh the risks. In light of this, the audiologist may choose to make available loaner and/or rental equipment.

2. Monitoring

A. Daily. It is well documented that malfunctions of FM systems occur in normal-use situations (Bess, Sinclair, & Riggs, 1984; Hoverstein, 1981; Maxon & Brackett, 1981). Daily monitoring is required to determine if the device is functioning properly. This daily check can be performed by the user, parent, teacher, speech-language pathologist, or any one who has received appropriate training by the audiologist.

Generally, a daily check consists of visual inspection of the device and its coupling, followed by listening to the sound quality of the device. In a sense, the user monitors sound quality continuously and may well detect such problems as intermittent function or a condition that "doesn't sound normal." However, an individual with normal hearing also should perform a listening check. This ensures detection of more subtle problems that the user may not identify. If possible, the listening check should be performed in the room/location where it will be used so that any interference will be detected.

The user or other appropriate individuals should have accessory supplies available to remedy routine problems as they occur. These supplies typically include such items as spare microphones, button receivers, boots, batteries, cords, and neckloops.

If a malfunction persists or otherwise cannot be identified and remedied through the daily check procedure, the audiologist should be notified.

B. Comprehensive Monitoring. Periodic monitoring by the audiologist may include on-site tests, such as electroacoustic analysis, probe microphone measurements, and troubleshooting measures. These procedures may be performed at any time, that is, whenever an unresolved problem is identified during the daily check. In any case, such procedures should be implemented at least once a year. With children it is advisable to monitor on a more frequent basis (at least semiannually).

At this writing, there is no electroacoustic measurement standard procedure for FM systems. However, many manufacturers make these measurements and provide the results with their devices. Therefore, until a measurement standard procedure is available, devices should be evaluated at least according to the measurement procedures used by the manufacturer, which are typically those of ANSI S3.22 (1987) Specifications of Hearing Aid Characteristics. Measurements such as full-on gain, SSPL90, harmonic distortion, and so forth, should be obtained and should be compared to the manufacturer's values. Both the FM and environmental microphone(s) should be evaluated separately, with care taken to properly position the FM microphone transmitter in relation to the test signal source.

C. Audiologic Re-Evaluation. Periodic evaluations of hearing and performance with the FM device are necessary to monitor stability of hearing, appropriate device settings, function, and degree of benefit. These evaluations should be performed at least annually for adults and semiannually when the device is worn by a child.

These assessments may include, but are not limited to, audiologic evaluations, coupler and real ear performance measurements, assessments of speech recognition, consultations, observations of performance in normal-use settings, questionnaires, and subjective scales of performance benefit.

Performance Measurements

In spite of the widespread use of FM systems in educational and other environments, little attention has been directed toward specific methods of measurements and fitting. Often the typical methods used with personal hearing aids have been used. These approaches may be appropriate in some aspects, but they have distinct limitations. Although there are no validated procedures for measurement and fitting of FM systems, several recent approaches have been proposed and can form the basis for a guideline for clinical assessment of these devices.

Types of Performance Measurements. There are two basic reasons for obtaining performance measurements with an FM system: (a) adjustment of control settings (e.g., SSPL90, tone controls) on the FM system to achieve the desired output, gain, and frequency response, and (b) assessment of speech recognition ability with the FM system.

Two methods will be described that allow adjustment of the control settings. One involves adjusting the FM system's electroacoustic characteristics in a 2-cm^3 coupler, and the other uses real-ear measurements with a probe-microphone unit. Speech recognition ability can be assessed with the FM system and compared to performance with hearing aids by using specific sound-field arrangements and appropriate signal-to-noise ratios. After several general principles are discussed, each of these approaches will be described below and a recommended approach provided.

General Principles in Assessment of FM Systems. Although FM systems are amplification devices similar to hearing aids, there are some distinct differences that need to be taken into account in developing measurement strategies. First, and perhaps most important, the input level of speech to the FM microphone is more intense than to the hearing aid microphone. With the FM microphone appropriately located 6 to 8 inches from the talker's mouth, the overall level of speech is approximately 80 to 85 dB SPL (Cornelisse, Gagne & Seewald, 1991; Hawkins, 1984; Lewis, 1991; Lewis, Feigin, Karasek & Stelmachowicz, 1991). This is 10–20 dB more intense than the typically assumed 60 to 70 dB SPL input to the microphone of the personal hearing aid 1 to 2 meters from the talker. This fact has important implications in the assessment and fitting of FM systems. If output measurements are being made to adjust and fit FM systems, then typical input levels should be used. This is particularly important given that

most FM microphone transmitters employ some type of input compression. The gain and output of the FM system may be quite different if lower-level signals, which are not representative of the speech input to the FM microphone, are used in the measurement procedure.

A second issue relates to the increased complexity of the FM systems compared with hearing aids. Many FM systems have several microphone input possibilities. These include lapel, lavalier, boom, and conference microphones for the transmitter and ear-level or body-worn microphones at the receiver. There may be one or two environmental microphones, and they may be omnidirectional or directional. It is important that each input channel in the FM system be evaluated and that the microphones be positioned in the proper manner. Input levels may need to be altered for different microphone types and locations.

In a similar vein, the FM system may have more than one volume control wheel (VCW). Some units have one VCW for the FM signal and one for the environmental microphone(s). On personal FM systems, there will be one VCW for the FM system and one for the personal hearing aid. In addition, there may be a VCW on the FM microphone transmitter. It is important that careful thought be given to the setting of these VCWs, as certain combinations can produce undesired results (Hawkins & Schum, 1985; Hawkins & Van Tasell, 1982; Lewis, 1991, 1992).

Finally, modifications must be made in some testing procedures to account for the way certain systems are physically arranged on the user. For instance, if a personal FM system with a neck loop is to be evaluated in a 2-cm^3 coupler, then the hearing aid (attached to the coupler) and neck loop must be located appropriately on a person (preferably the user) if the measurements are to be valid.

Electroacoustic Measures in a 2-cm^3 Coupler for Fitting and Adjustment of FM Systems. Measurements of the FM system in a 2-cm^3 coupler can be used to adjust the FM system for appropriate amplification characteristics for an individual user. The use of 2-cm^3 coupler measurements to achieve this purpose has been described in detail by Lewis et al. (1991) and Seewald and Moodie (1992). In this approach one important assumption must be made: the personal hearing aids are functioning properly and have been adjusted to meet the client's amplification needs. If this assumption can be made or verified, then the task becomes one of adjusting the FM system so that it performs similarly to the hearing aid, given the differences in input levels described earlier.[3,4] The following brief outline gives an overview of the approach for such adjustments and is a modified version of that proposed by Seewald and Moodie (1992) and discussed by Lewis et al. (1991). For complete details, see Insert 1.

1. Determine that the user's personal hearing aids are functioning properly and have been set appropriately.

2. Measure critical electroacoustic characteristics on the personal hearing aid: (a) SSPL90, (b) output of the hearing aid with a 65 dB SPL input at user VCW position and control settings. The measures of maximum output and output for typical inputs will serve as targets for the adjustment of the FM system.

3. Place the microphone of the FM system in the calibrated test position. Couple the external receiver of the FM system to the 2-cm^3 coupler appropriately. Obtain an SSPL90 curve and adjust the maximum output control on the FM system until the SSPL90 curve most closely matches that obtained with the hearing aid alone in #2 above.

4. Using an 80 dB SPL input to the FM microphone, adjust the FM VCW and tone control(s) until the 2-cm^3 coupler output levels most closely match those obtained for the hearing aid alone in #2 above. Note that output is being matched, not gain. The gain of the FM system will be less than that of the hearing aid, because of input levels. (If a personal FM system is being used, leave the hearing aid VCW at the user setting and adjust only the FM VCW until the closest match is obtained.) When the closest match has been achieved, harmonic distortion measurements should be obtained and a careful listening check performed to verify that the adjusted control settings on the FM system produce a clear and undistorted speech signal.

If a self-contained FM system is being used, the environmental microphone(s) portion of the FM system should be assessed using the same input levels as were used above with the hearing aids alone. The SSPL90 measured in the environmental-microphone mode may be different from that measured in the FM-only mode. As a result, the audiologist should recheck the FM-only SSPL90 if the control has been adjusted during the environmental microphone assessment. For many FM systems there is only one VCW on the FM receiver that affects the level of both the FM signal and the environmental microphone(s). Under these circumstances, a decision will have to be made regarding which input mode will be adjusted. The decision can be modified in cases through the use of a control that affects the level of the FM signal relative to the environmental microphone signal. For some systems, there are VCWs for both the FM and the environmental microphone(s); in these cases the two can be adjusted independently. The reader is referred to Lewis (1993) and Lewis et al. (1991) for a discussion of the issue of how to conceptualize the adjustment of the FM signal relative to the environmental microphone signal.

Real-Ear Measurements for Fitting and Adjustment of FM Systems. Two approaches have been used to fit and adjust FM systems using assessment of real-ear performance: functional gain or aided sound-field thresholds, and probe-microphone measurements. While behavioral measurements of real-ear performance such as functional gain have been recommended by some investigators (Madell, 1992b; Turner & Holte, 1985; Van Tasell, Mallinger, & Crump, 1986), several distinct limitations of this approach have been described recently (Lewis et al., 1991; Seewald & Moodie, 1992). The major problem with the functional gain approach is that the input levels to the FM microphone at the aided threshold will typically be quite low during the measurement procedure. These lower input levels will not be representative of the talker's voice entering the FM microphone during actual use of the FM system. These input level differences, combined with the fact that most FM microphone-transmitters incorporate input compression, make the aided sound field threshold values difficult to interpret. While the threshold values would represent the lowest intensity signal that the user could detect with the FM system, they would lead to an overestimate of both the amount of gain of the FM signal under normal use conditions and the sensation level at which speech would be

[3]For self-contained FM systems that use earbuds or walkman-type headsets, probe microphone measures may be preferred because those receivers cannot be coupled adequately to the 2-cm^3 coupler.

[4]It is important to use the same type of signal (such as puretones or speech-weighted noise) when making measurements on the hearing aid and FM system for comparision purposes.

present (Lewis et al., 1991; Seewald, Hudson, Gagne, & Zelisko, 1992; Seewald & Moodie, 1992).

The limitations of behavioral testing, along with the inability to assess the maximum output of the FM system with threshold measurements, have led to an increasing emphasis on the use of probe-microphone measurements. Using this approach, the real-ear gain/frequency response and maximum output can be assessed with realistic input levels. Details on various approaches can be found in Hawkins (1987), Lewis et al. (1991), Mueller, Hawkins, and Northern (1992), and Seewald and Moodie (1992).

One approach to probe-microphone measurements is similar to that described above for 2-cm^3 coupler measurements. The task is to match the real-ear output of the FM system using appropriate input levels to the real-ear output of the user's personal hearing aid. Again, the assumption must be made that the personal hearing aid is functioning acceptably. A second approach is to determine what amplification characteristics are desirable and adjust the FM system to best match that goal, regardless of the performance of the personal hearing aid. If this latter approach is used, then a procedure that specifies goals for real-ear maximum output and aided output levels for speech is needed. One such procedure is the Desired Sensation Level (DSL) approach described by Seewald, Zelisko, Ramji, and Jamieson (1991).

An example of how probe-microphone measurements can be made with FM systems is briefly outlined below (see Insert 2 for a detailed description).

1. The FM microphone is placed in the calibrated spot in front of the sound-field loudspeaker of the probe-microphone system (exactly how this is accomplished may depend on the particular probe-microphone system being used) or next to the controlling microphone of the probe system (Hawkins, 1987).

2. The probe-microphone tube is placed in the ear canal of the client and the FM receiver is set to receive only the FM signal. A real-ear SSPL90 curve, or Real Ear Saturation Response (RESR) is obtained. (NOTE: Care should be exercised in making this measurement so as to prevent excessive output levels in the ear and to avoid discomfort; for the first RESR measurements, the output control should be set to the minimum position.) The output control is adjusted until the desired RESR is obtained (see Hawkins, 1992, for more details), which could be either the RESR of the personal hearing aid or an independently generated target value. An alternative to directly measuring the RESR has been outlined by Sullivan (1987) and described further by Hawkins (1992, 1993).

3. Using an 80 dB SPL input to the FM microphone, adjust the FM VCW and tone control(s) until the desired output levels in the ear canal are obtained. If a personal FM system is used, the hearing aid VCW should be set to the typical use position, and the FM VCW should be adjusted for the desired output levels.

4. If an environmental microphone(s) is present, turn off the FM microphone and obtain an RESR measurement through the environmental microphone mode. (If an adjustment to the SSPL90 control is necessary, the FM-only measurement should be repeated to determine if it is still appropriate.) Repeat #3 using 65 dB SPL input. As described earlier, if only one VCW exists on the FM receiver and it controls both the level of the FM signal and the environmental microphone(s), then a decision must be made as to where the single setting will be. If separate VCWs are present for the FM signal and environmental microphone(s), then the environmental microphone VCW can be adjusted to appropriate level relative to the FM signal (see Lewis, 1993, and Lewis et al., 1991, for more discussion of this issue).

Speech Recognition Testing With FM Systems. It is often necessary and/or desirable to assess the speech recognition ability of a user with an FM system. It may also be important to compare such performance with that obtained using a personal hearing aid(s). Lewis et al. (1991) have described a procedure for making assessments of speech recognition ability with FM systems and hearing aids in a sound booth. A brief outline of this procedure follows (See Insert 3 for a detailed description).

1. For the hearing aid assessment, speech recognition is assessed with a speech signal of 55 dB HL and in a background noise of 50 dB HL, yielding a S/N ratio of +5 dB, a value typical of many elementary school classrooms (Crandell & Smaldino, 1993; Finitzo-Hieber, 1988; Markides, 1986). Assuming the sound field has been calibrated for a 45-degree azimuth, the intensity of the speech would be 68 dB SPL, a level that should be typical of the input to the hearing aid microphone.[5] A measure of speech recognition is obtained with an age- and language-appropriate test.

2. To assess performance with the FM system, the user is removed from the sound booth and placed next to the audiologist at the audiometer. The FM microphone is placed in the calibrated spot in the sound field where the user was earlier seated. The noise remains at 50 dB HL, but the speech signal is increased to 70 dB HL (83 dB SPL). This 15-dB increase in speech intensity (from 55 to 70 dB HL) is equivalent to the increase in SPL that occurs at the FM microphone (Hawkins, 1984). A speech recognition score is now obtained under these conditions. The effective S/N ratio at the FM microphone is −20 dB and represents the actual situation that would exist at the FM microphone.

It should be noted that the above testing arrangement addresses speech recognition performance in the FM-only mode, that is, the environmental microphone(s) are not active. If the performance of the FM system's environmental microphones are to be assessed without the FM signal present, then the measurement should be made under the hearing aid-only protocol. Assessment of the FM system with the FM signal and environmental microphone(s) requires a different arrangement. The physical arrangement for the hearing aid-only assessment is used with two important exceptions (see Insert 3, Figure 3-C, for more details). The user wears the FM receiver with the FM and environmental microphone(s) active. The FM microphone is located at a position in front of the loudspeaker that produces a speech input of 83 dB SPL to the FM microphone. A potential problem may exist with this physical arrangement, as the high-frequency input to the FM microphone can be reduced at this close location in front of the loudspeaker (Lewis et al., 1991).

Conclusion. These guidelines were developed to provide direction to audiologists in the selection and fitting of

[5]Instead of using the plus and minus 45-degree azimuth loudspeaker arrangement, the audiologist may prefer that speech originate from 0 degrees and noise from 180 degrees. This would eliminate the possibility of a head shadow effect for either the speech or noise in the case of monaural fitting. If the 0/180 arrangement is used and the sound field is calibrated with the appropriate 17-dB reference, then the speech signal can be presented at 50 dB HL (67 dB SPL) and the noise at 45 dB HL (62 dB SPL).

FM systems. The committee recognizes the complexity of the technology (including microphone and coupling strategies) and the many unresolved issues of measurement (including input stimulus type and level). These guidelines should be viewed as a reflection of the current understanding of these issues. Future technology and research will mandate consideration of alternate approaches and tools.

References

American National Standards Institute. (1987). *Specifications of hearing aid characteristics* (ANSI §3.22). New York: ANSI.

American Speech-Language-Hearing Association. (1984). *Definition of and competencies for aural rehabilitation*. Rockville, MD: ASHA.

American Speech-Language-Hearing Association. (1990, April). Scope of Practice, Speech-Language Pathology and Audiology. *Asha* (Suppl. 2), pp. 1–2.

American Speech-Language-Hearing Association. (1991a, December). Issues in ethics. *Asha*, p. 51.

American Speech-Language-Hearing Association. (1991b, January). Amplification as a remediation technique for children with normal peripheral hearing. *Asha* (Suppl. 3), pp. 22–24.

American Speech-Language-Hearing Association. (1991c, March). Guidelines for graduate education in amplification. *Asha* (Suppl. 5), pp. 35–36.

American Speech-Language-Hearing Association. (1991d, March). The use of FM amplification instruments for infants and preschool children with hearing impairment. *Asha* (Suppl. 5), pp. 1–2.

American Speech-Language-Hearing Association. (1992, March). Code of ethics. *Asha* (Suppl. 9), pp. 1–2.

American Speech-Language-Hearing Association. (1993a, March). Preferred practice patterns for the professions of speech-language pathology and audiology. *Asha* (Suppl. 11).

American Speech-Language-Hearing Association. (1993b, March). Guidelines for audiology services in the schools. *Asha* (Suppl. 10), pp. 24–32.

Benoit, R. (1989). Home use of the FM amplification systems during the early childhood years. *Hearing Instruments, 40*, 8–12.

Bess, F., Klee, T., & Culbertson, J. (1986). Identification, assessment and management of children with unilateral sensorineural hearing loss. *Ear and Hearing, 7*(1), 43–51.

Bess, F., Sinclair, J., & Riggs, D. (1984). Group amplification in schools for the hearing impaired. *Ear and Hearing, 5*, 138–43.

Blake, R., Field, B., Foster, C., Platt, F., & Wertz, P. (1991). Effect of FM auditory trainers on attending behaviors of learning-disabled children. *Language, Speech, and Hearing Services in the Schools, 22*, 111–114.

Cargill, S., & Flexer, C. (1989). Issues in fitting FM units to children with unilateral hearing losses: Two case studies [Monograph]. *Journal of the Educational Audiology Association, 1*(1), 30–47.

Casterline, C., Flexer, C., & DePompei, R. (1989). *Use of assistive listening devices with head injured survivors*. Paper presented at the meeting of the American Speech-Language-Hearing Association, St. Louis, MO.

Cornelisse, L.E., Gagne, J.P., & Seewald, R.C. (1991). Long-term average speech spectrum at the chest level microphone location. *Canadian Journal of Speech-Language Pathology and Audiology, 15*(3), 7–12.

Crandell, C., & Smaldino, J. (in press). The importance of room acoustics. In R. Tyler, (Ed.), *Assistive listening devices*.

Federal Register. (1992a). 34 FR Chapter II § 300.16, Vol. 57, No. 189, p. 44303.

Federal Register. (1992b). 34 FR Chapter III § 303.12, Vol. 57, No. 85, p. 18993.

Finitzo-Hieber, T. (1988). Classroom acoustics. In R. Roeser (Ed.), *Auditory disorders in school children* (2nd ed., pp. 221–233). New York: Thieme-Stratton.

Flexer, C. (1989). Turn on sound: An odyssey of sound field amplification. *Educational Audiology Association Newsletter, 5*, 6.

Flexer, C., Wray, D., Black, T., & Millin, J. (1987). Amplification devices: Evaluating classroom effectiveness for moderately hearing-impaired college students. *Volta Review, 89*(7), 347–57.

Hawkins, D. (1984). Comparisons of speech recognition in noise by mildly-to-moderately hearing-impaired children using hearing aids and FM systems. *Journal of Speech and Hearing Disorders, 49*(4), 409–418.

Hawkins, D. (1987). Assessment of FM systems with probe tube microphone system. *Ear and Hearing, 8*(5), 301–303.

Hawkins, D. (1992). Selecting SSPL90 using probe-microphone measurements. In H. Mueller, D. Hawkins, & J. Northern (Eds.), *Probe microphone measurements: Hearing aid selection and assessment* (pp. 145–158). San Diego, CA: Singular Publishing Group.

Hawkins, D.B. (1993). Assessment of hearing aid maximum output. *American Journal of Audiology, 2*(1), 36–37.

Hawkins, D., & Schum, D. (1985). Some effects of FM-system coupling on hearing aid characteristics. *Journal of Speech and Hearing Disorders, 50*(2), 132–141.

Hawkins, D., & Van Tasell, D. (1982). Electroacoustic characteristics of personal FM systems. *Journal of Speech and Hearing Disorders, 47*(4), 335–362.

Hoverstein, G.H. (1981). A public school audiology program: Amplification maintenance, auditory management, and in-service education. In F.H. Bess, B.A. Freeman, & J.S. Sinclair (Eds.), *Amplification in education* (pp. 224–247). Washington, DC: A.G. Bell Publishers.

Lewis, D. (1991). FM systems and assistive devices: Selection and evaluation. In J.A. Feigin & P.G. Stelmachowicz (Eds.), *Pediatric amplification: Proceedings of the 1991 National Conference* (pp. 115–138). Omaha, NE.

Lewis, D.E. (1992). FM systems. *Ear and Hearing, 13*(5), 290–293.

Lewis, D. (in press). Assistive devices for classroom listening: FM systems. *American Journal of Audiology, A Journal of Clinical Practice*.

Lewis, D., Feigin, J., Karasek, A., & Stelmachowicz, P. (1991). Evaluation and assessment of FM systems. *Ear and Hearing, 12*(4), 268–280.

Loose, F. (1984). *Learning disabled students use FM wireless systems*. Rochester, MN: Telex Communications. Madell, J.R. (1992a). FM Systems as a primary amplification for children with profound hearing loss. *Ear and Hearing, 13*(2), 102–107.

Madell, J.R. (1992a). FM systems as a primary amplification for children with profound hearing loss. *Ear and Hearing, 13*(2), 102–107.

Madell, J.R. (1992b). FM Systems for children birth to age five. In M. Ross (Ed.), *FM auditory training systems: Characteristics, selection, and use* (pp. 157–174). Timonium, MD: York Press.

Markides, A. (1986). Speech levels and speech-to-noise ratios. *British Journal of Audiology, 20*, 115–120.

Maxon, A.B., & Brackett, D. (1981). Mainstreaming hearing-impaired children. *Audio Journal for Continuing Education, 6*, 10.

Maxon, A.B., & Smaldino, J. (1991). Hearing aid management in children. In C. Flexer (Ed.), *Current Audiologic Issues in Educational Management of Children with Hearing Loss*. New York: Seminars in Hearing.

Mueller, H.G., Hawkins, D.B., & Northern, J. (1992) *Probe microphone measurements: Hearing aid selection and assessment*. San Diego, CA: Singular Publishing Group.

Pfeffer, E.B. (1992). Alternate uses for FM systems. In M. Ross (Ed.), *FM auditory training systems: Characteristics, selection, and use* (pp. 211–224). Timonium, MD: York Press.

Ross, M. (Ed.) (1992). *FM auditory training systems: Characteristics, selection and use*. Timonium, MD: York Press.

Ross, M., & Giolas, T. (1971). Effect of three classroom listening conditions on speech intelligibility. *American Annals of the Deaf, 116*, 580–584.

Ross, M., Giolas, T., & Carver, D. (1973). Effect of three classroom listening conditions on speech intelligibility. A replication in part. *Language, Speech, Hearing Services in Schools, 4*, 72–76.

Seewald, R., Hudson, S., Gagne, J., & Zelisko, D. (1992). Comparison of two methods for estimating the sensation level of amplified speech. *Ear and Hearing, 13*(3), 142–149.

Seewald, R., & Moodie, K. (1992). Electroacoustic considerations. In M. Ross (Ed.), *FM auditory training systems: Characteristics, selection, and use* (pp. 75–102). Timonium, MD: York Press.

Seewald, R., Zelisko, D., Ramji, K., & Jamieson, D. (1991). *DSL 3.0 user's manual*. London, Ontario, Canada: University of Western Ontario.

Smith, D., McConnell, J., Walter, T., & Miller, S. (1985). Effect of using an auditory trainer on the attentional, language, and social behaviors of autistic children. *Journal of Autism Developmental Disorders, 15*, 285–302.

Stach, B.A., Loiselle, L.H., & Jerger, J.F. (1987). *FM systems used by children with central processing disorders*. Paper presented at the annual convention of the American Speech-Language-Hearing Association, New Orleans, LA.

Sullivan, R. (1987). Aided SSPL90 response in the real ear: A safe estimate. *Hearing Instruments, 38*, 36.

Thibodeau, L. (1990). Electroacoustic performance of direct-input hearing aids with FM amplification systems. *Language, Speech and Hearing Services in the Schools, 21*, 49–56.

Thibodeau, L., & Saucedo, K. (1991). Consistency of electroacoustic characteristics across components of FM systems. *Journal of Speech and Hearing Research, 34*(4), 628–635.

Turner, C., & Holte, L. (1985). Evaluation of FM amplification systems. *Hearing Instruments, 36*, 6–12, 56.

Van Tasell, D., Mallinger, C., & Crump, E. (1986). Functional gain and speech recognition with two types of FM amplification. *Language Speech and Hearing Services in Schools, 17*, 26–37.

BEST COPY AVAILABLE

Insert 1

Outline for FM System Adjustment Using 2 cm³ Coupler Measurements

1. Verify through coupler measurements and/or probe-microphone measurements that the client's hearing aid is functioning properly and has been fit appropriately for the hearing loss.
2. Obtain 2 cm³ measurements on the client's personal hearing aid.
   a. Obtain an SSPL90 curve using a 90 dB SPL swept pure tone with the hearing aid VCW full-on.
   b. Adjust the hearing aid VCW to the use position. Using a 65 dB SPL input, obtain an output (not gain) curve in the 2 cm³ coupler.
3. Set up the FM system for 2 cm³ coupler measurements (See Figure 1-A).
   a. Place the FM microphone in the calibrated test position.
   b. With the FM receiver outside the test box, set the receiver for FM-only reception. Attach the button or behind-the-ear (BTE) receiver to the HA-2 2 cm³ coupler. Maintain a minimum distance of 2 ft between the FM transmitter and receiver.
   c. If a personal FM system is used, connect the FM receiver to the personal hearing aid (also located outside the test box) via the coupling method that the client will use (direct audio input, neck loop, or silhouette). If a neck loop is used, the hearing aid should be placed on the client (or other person of similar size, if possible, if the client is not available) and the earhook connected to the HA-2 2 cm³ coupler (or individual earmold connected to the HA-1 2 cm³ coupler) which is held next to the client's ear (See Figure 1-B).
4. Adjust the FM system SSPL90 to match the personal hearing aid SSPL90.
   a. Turn the FM receiver VCW full-on (also turn the personal hearing aid VCW full-on if a personal FM system is being evaluated) and obtain an SSPL90 curve with a 90 dB SPL pure-tone sweep.
   b. Adjust the FM systems SSPL90 control until the SSPL90 curve most closely matches that of the personal hearing aid (#2 above).
5. Adjust the FM system output and frequency response to match the personal hearing aid.
   a. Using an 80 dB SPL input delivered to the FM microphone in the test box, adjust the FM receiver VCW and tone control(s) until the 2 cm³ coupler output (not gain) most closely matches the output obtained with the personal hearing aid (#2b above).
   b. With a personal FM system, leave the hearing aid VCW and tone control(s) at the user setting and adjust only the FM receiver VCW and tone control(s) to obtain the closest match to the personal hearing aid alone response (#2b above).
6. Measure the maximum output and frequency response of the environmental microphone(s) if a self-contained FM system is being used.
   a. Turn the FM VCW to full-on, measure the SSPL90, and adjust as necessary. If the SSPL90 control is changed, measure the FM-only SSPL90 again and determine if readjustment is needed.
   b. Measure the output using a 65 dB SPL input. If only one VCW exists on the FM receiver and it controls both the level of the FM signal and the environmental microphone(s), then a decision must be made as to where the single setting will be. If separate VCWs are present for the FM signal and environmental microphone(s), then the environmental microphone VCW can be adjusted to an appropriate level relative to the FM signal (see Lewis et al., 1991, and Lewis, 1993, for more discussion of this issue). If matching desired output values for the FM-only mode and environmental microphone mode leads to different control settings, priority should be given to matching the FM-only targets.
7. Measure harmonic distortion to verify acceptable values.
8. Perform a complete listening check to assure acceptable clarity and low distortion.

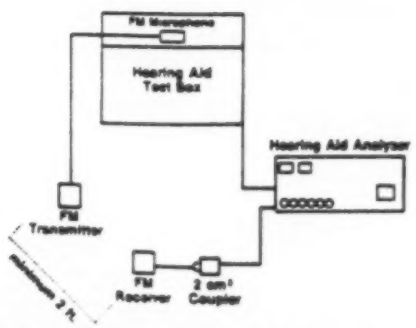


FIGURE 1-A. Physical arrangement for 2 cm³ coupler measurements FM systems when measuring FM transmission mode only. The FM receiver may be attached to the HA-2 2 cm³ coupler via an external button receiver, BTE receiver, or via a personal hearing aid if direct audio input or a silhouette inductor is utilized. (Adapted from Thibodeau, 1992).

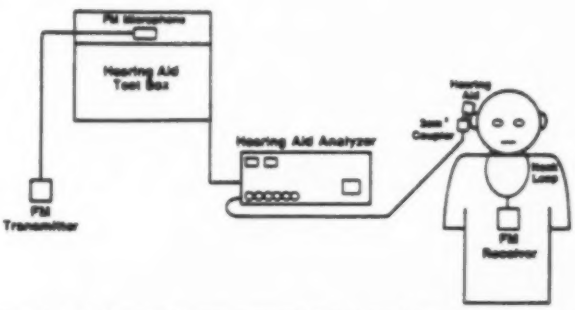


FIGURE 1-B. Physical arrangement for 2 cm³ coupler measurements of the FM system connected to a personal hearing aid via a neck loop. The hearing aid is set to the "T" position and the environmental microphone(s), if present, on the FM system are deactivated if possible.

170

Insert 2

Outline for FM System Adjustment Using Probe-Microphone Measurements

1. Determine a set of target real-ear maximum output and frequency response values through either
   a. using existing real-ear measurements obtained from an appropriately fit personal hearing aid
      OR
   b. a published amplification selection scheme, e.g. DSL (Seewald et al., 1991)
2. Prepare the test environment for probe-microphone measurements.
   a. The placement of the FM microphone in the sound field will depend on the specific probe-microphone system. See Figure 2-A for a possible arrangement if the probe system uses an off-line (or stored) equalization method. During equalization, the reference microphone is placed at the location of the FM microphone. During the measurements the reference microphone is disabled. If the system uses a controlling microphone for on-line equalization, it can be located near the FM microphone, as shown in Figure 2-B. (Note: In this latter arrangement, if the reference microphone is near the ear, then feedback may be a problem in higher gain instruments.)
   b. Place the probe tube in the ear canal at an appropriate location, connect the FM system (set to FM only) to the client via the coupling method that will be used.
3. Adjust the FM system maximum output to the desired position.
   a. Set the maximum output control to the minimum position.
   b. Set the FM VCW to the highest level before feedback (and the client's hearing aid VCW to the highest possible use position if it is a personal FM system). Obtain a measure of the Real Ear Saturation Response (RESR) by introducing a 90 dB SPL swept tonal signal and measuring the output in the ear canal. (NOTE: Extreme care should be exercised in making this measurement so as to prevent excessive output and/or discomfort; the output control should be set to the minimum position for the first measurement.) An alternative to directly measuring the RESR has been outlined by Sullivan (1987) and described further by Hawkins (1992, 1993).
   c. Adjust the output control until the RESR most closely matches the personal hearing aid RESR or the desired RESR targets.
4. Adjust the FM system real-ear output and frequency response for the FM signal to match the personal hearing aid values or the desired real-ear values.
   a. Using an 80 dB SPL signal delivered to the FM microphone, adjust the FM receiver VCW and tone control(s) until the desired real-ear values are most closely matched.
   b. With a personal FM system, leave the hearing aid VCW and tone control(s) at the user setting and adjust only the FM receiver VCW and tone control(s) to obtain the closest match.
5. Measure the real-ear maximum output and frequency response of the environmental microphone(s) if a self-contained FM system is being used.
   a. Turn off the FM microphone and place the user in the sound field as for probe-microphone measurements with a personal hearing aid.
   b. Adjust the FM VCW to just below feedback, measure the RESR, and adjust as necessary. If the SSPL90 control is changed, measure the FM-only RESR again and determine if readjustment is needed.
   c. Measure the real-ear output using a 65 dB SPL signal. If matching desired output values for the FM-only mode and environmental microphone mode leads to different control settings, priority should be given to matching the FM-only targets.
6. Remove the FM system from the user and measure harmonic distortion in a 2 cm^3 coupler to verify acceptable values.
7. Perform a complete listening check to assure acceptable clarity and low distortion.

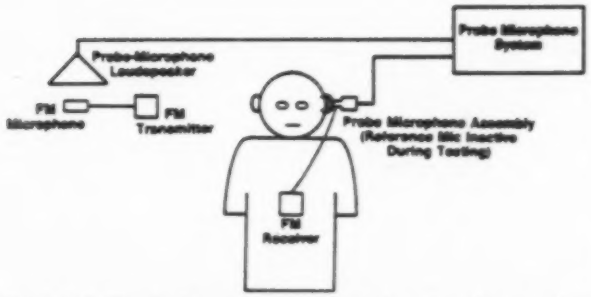


FIGURE 2-A. Physical arrangement for probe-microphone evaluation of FM system for the FM-only mode when the probe-microphone system uses an off-line (or stored) equalization method. During the equalization procedure the reference microphone is active and located next to the FM microphone. During the actual probe measurements the reference microphone is disabled.

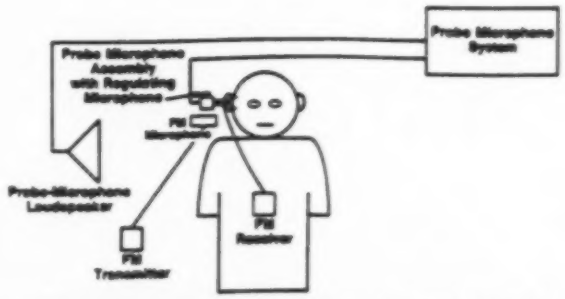


FIGURE 2-B. Physical arrangement for probe-microphone evaluation of FM system for the FM-only mode when the probe-microphone system uses a controlling microphone for on-line equalization.

171 BEST COPY AVAILABLE

Insert 3

Speech Recognition Measures With FM Systems and Personal Hearing Aid(s)

1. Select a speech recognition test that is appropriate for the age and language of the client.
2. Place the hearing aid(s) on the client and set up the arrangement shown in Figure 3-A.
   a. Speech is at 55 dB HL (68 dB SPL) and noise at 50 dB HL (63 dB SPL), producing a S/N ratio of +5 dB. The loudspeakers are located at plus and minus 45 degree azimuths.
   b. Obtain a speech recognition score.
3. Place the FM receiver set to FM-only on the client and set up the arrangement shown in Figure 3-B.
   a. Speech is 70 dB HL (83 dB SPL) and noise is 50 dB HL (63 dB SPL), producing a S/N ratio of +20 dB at the FM microphone. The loudspeakers are located at plus and minus 45 degrees azimuth. With directional microphones, point the microphone at the loudspeaker producing the speech signal.
   b. Obtain a speech recognition score.
4. If a speech recognition measure is desired for FM system with environmental microphone(s) active, set up the arrangement shown in Figure 3-C.
   a. Speech is 55 dB HL (68 dB SPL) at the client's location and noise is 50 dB HL (63 dB SPL), producing a S/N ratio of −5 dB at the environmental microphone(s).
   b. The FM microphone is positioned in front of the speech loudspeaker at a location designed to produce 83 dB SPL speech input to the FM microphone.
   c. The environmental microphone(s) on the FM system are activated.
   d. Obtain a speech recognition score.

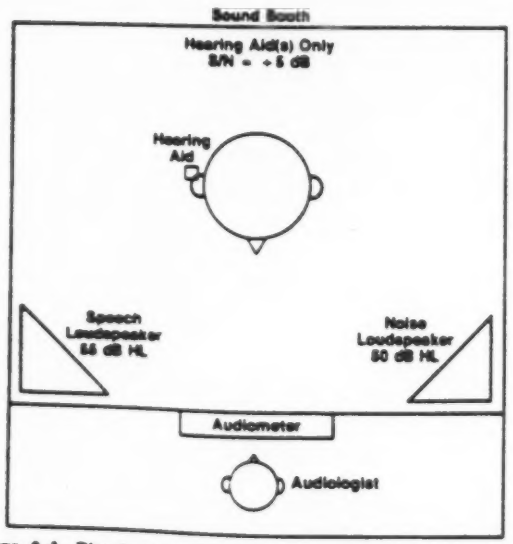


Figure 3-A. Physical arrangement in sound booth for speech recognition testing of hearing aid(s) only for comparison purposes to FM system. (Modified from Lewis et al., 1991)

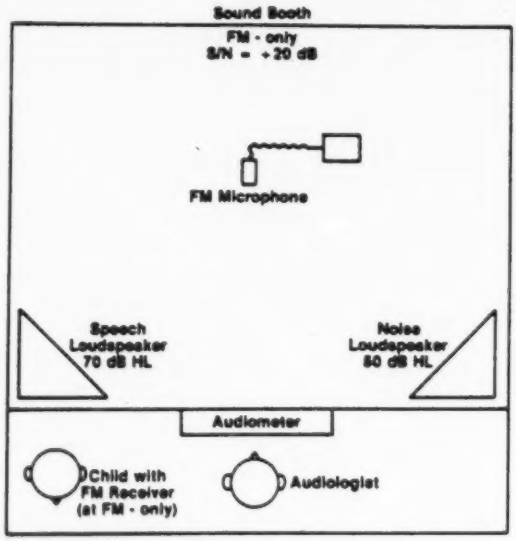


Figure 3-B. Physical arrangement in sound booth for speech recognition testing of FM system set to FM-only for comparison purposes to hearing aid(s) only. (Modified from Lewis et al., 1991)

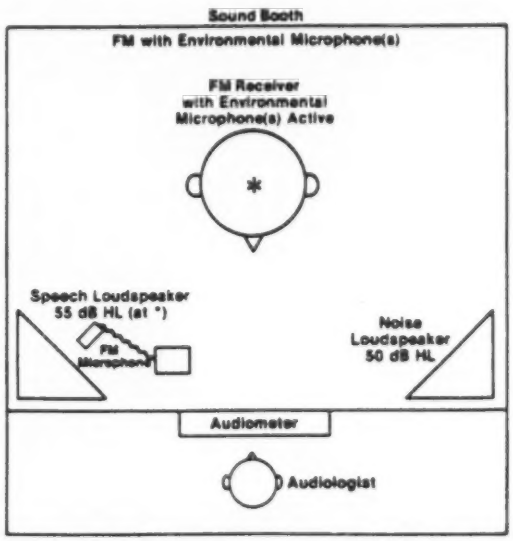


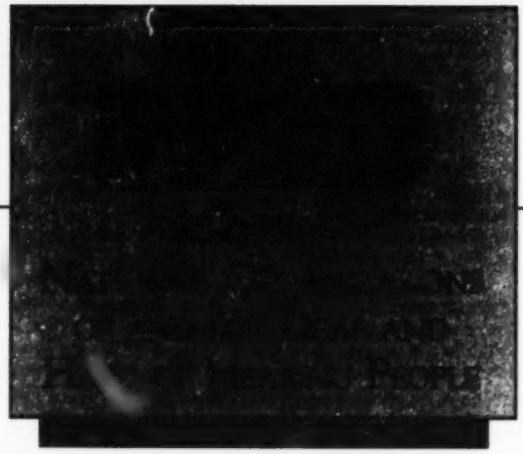
Figure 3-C. Physical arrangement in sound booth for speech recognition testing of FM system with environmental microphone(s) active. (See Lewis et al., 1991, for potential difficulties in high-frequency input to the FM microphone using this arrangement.)

BEST COPY AVAILABLE

Appendix I

National Information Center on Deafness
Directory of National Organizations of
And For Deaf and Hard of Hearing People

1994



National Information Center On Deafness
Gallaudet University
800 Florida Ave. NE
Washington, DC 20002-3695

This directory was developed with information provided by each organization. All of the organizations are national and nonprofit and provide information on deaf and hard of hearing people and/or specific professional or consumer areas of interest.

Each organization was asked to identify up to four descriptors that best describe the organization's focus. The codes are:

C Consumer and/or Advocacy
E Educational
F Funding Source
I Information and/or Referral
M Medical
P Professional
Rc Recreational
R Religious
Rs Research
S Self-help/Support
So Social

ABLEDATA

DIRECTOR-Lynn Bryant
8455 Colesville Road, Suite 935
Silver Spring, Md 20910
Voice/TTY: (301) 588-9285
Voice/TTY: (800) 227-0216
Fax: (301) 587-1967
BBS: (301) 589-3563

ABLEDATA provides searches and fact sheets on types of devices and other aspects of assistive technology.

I

ALEXANDER GRAHAM BELL ASSOCIATION FOR THE DEAF, INC.

DIRECTOR-Donna McCord Dickman, Ph.D.
3417 Volta Place NW
Washington, DC 20007
Voice/TTY: (202) 337-5220
PRESIDENT-Patrick Stone
PUBLICATIONS-***Volta Review*** (journal) ***Newsounds*** (newsletter), ***Our Kids Magazine***
Editors-David Conway ***(Volta Review)*** Brook Rigler ***(Newsounds)*** Phyllis Feibelman ***(Our Kids)***
NAT'L CONVENTION-1994, Rochester, N.Y.

Gathers and disseminates information on hearing loss, promotes better public understanding of hearing loss in children and adults, provides scholarships, financial and parent-infant awards, and promotes early detection of hearing loss in infants.

F I P S

AMERICAN ACADEMY OF OTOLARYNGOLOGY-HEAD AND NECK SURGERY

VICE PRESIDENT-Jerome C. Goldstein, M.D.
1 Prince St.
Alexandria, VA 22314
Voice: (703) 836-4444
TTY: (703) 519-1585
FAX: (703) 683-5100
PRESIDENT-Mansfield F.W. Smith, M.D.
PUBLICATIONS-***Otolaryngology-Head and Neck Surgery*** (journal) ***The Bulletin*** (newsletter)
Editors-J.Gail Neely, M.D. ***(Otolaryngology)*** Jerome C. Goldstein, M.D. ***(The Bulletin)***
NAT'L CONVENTION-Sept. 18-21, 1994, San Diego, Calif.

Promotes the art and science of medicine related to otolaryngology-head and neck surgery, including providing continuing medical education courses and publications. Distributes patient leaflets relating to ear problems and makes referrals to physicians.

M P

AMERICAN ASSOCIATION OF THE DEAF-BLIND

PROGRAM MANAGER-Joy Larson
814 Thayer Ave., Room 302
Silver Spring, MD 20910
TTY: (301) 588-6545
FAX: (301) 588-8705
PRESIDENT-Jeffrey S. Bohrman
PUBLICATION-***Deaf-Blind American***
Editor-Harry Anderson
NAT'L CONVENTION-June 11-17, 1994, Greensboro, N.C.

Promotes better opportunities and services for deaf-blind people. Mission is to assure that a comprehensive, coordinated system of services is accessible to all deaf-blind people, enabling them to achieve their maximum potential through increased independence, productivity, and integration into the community. The annual conventions provide a week of workshops, meetings, tours, and recreational activities.

C I

AMERICAN ATHLETIC ASSOCIATION OF THE DEAF

DIRECTOR-Shirley H. Platt
3607 Washington Blvd., #4
Ogden, UT 84403-1737
Voice: (801) 393-5710
TTY: (801) 393-7916
FAX: (801) 393-2263
PRESIDENT-Lawrence R. Fleischer
PUBLICATIONS-***AAAD Bulletin, Deaf Sports Review***
Editor-Shirley H. Platt
TOURNAMENTS-March 27-April 3, 1994, Akron, Ohio; Sept. 22-24, 1994, San Jose, Calif.

Governing body for all deaf sports and recreation in the United States. Twenty different sports organizations and 200 member clubs are affiliates of AAAD. Sponsors U.S. team to the World Games for the Deaf and other regional, national, and international competitions.

I So Rc

AMERICAN DEAFNESS AND REHABILITATION ASSOCIATION

P.O. Box 251554
Little Rock, AR 72225
Voice/TTY: (501) 868-8850
FAX: (501) 868-8812
PRESIDENT-Debra Guthmann
PUBLICATIONS-***Journal of American Deafness and Rehabilitation Association, ADARA UP-DATE Newsletter***
Editors-Gerry Walter, Ph.D. ***(Journal)*** Nancy Long, Ph.D. ***(Newsletter)***
NAT'L CONVENTION-May 30-June 3, 1995, Kansas City, Okla.

Promotes and participates in quality human service delivery to deaf people through agencies and individuals. ADARA is a partnership of national organizations, local affiliates, professional sections, and individual members working together to support social services and rehabilitation delivery for deaf and hard of hearing people.

I P

AMERICAN HEARING RESEARCH FOUNDATION

EXEC. DIRECTOR-William L. Lederer
55 E. Washington St., Suite 2022
Chicago, IL 60602
Voice: (312) 726-9670
PUBLICATION-***Newsletter***
Editor-William L. Lederer

Supports medical research and education into the causes, prevention, and cure of deafness, hearing losses, and balance disorders. Also keeps physicians and the public informed of the latest developments in hearing research and education.
Rs

AMERICAN SOCIETY FOR DEAF CHILDREN

EXEC. DIRECTOR-Sandy Harvey
Business Office: 10th and Tahlequah Sts.
Sulphur, OK 73086
Voice/TTY: (800) 942-ASDC
PRESIDENT-Jeffrey Cohen
PUBLICATION-***The Endeavor***
Editor-Barbara Aschenbrenner
NAT'L CONVENTION-1994, St. Augustine, Fla.

ASDC is a nonprofit parent-helping-parent organization promoting a positive attitude toward signing and deaf culture. Also provides support, encouragement, and current information about deafness to families with deaf and hard of hearing children.
C I S

AMERICAN SPEECH-LANGUAGE-HEARING ASSOCIATION

EXEC. DIRECTOR-Frederick T. Spahr, Ph.D.
10801 Rockville Pike
Rockville, MD 20852
Voice/TTY: (301) 897-5700
HELPLINE: (800) 638-8255
PRESIDENT-Jeri A. Logmann
PUBLICATIONS-***Journal of Speech-Language-Hearing Research; American Journal of Audiology; American Journal of Speech-Language Pathology; Language Speech and Hearing Services in Schools***
Editor-Russell L. Malone, Ph.D.
NAT'L CONVENTION-Nov. 18-21, 1994 New Orleans, La.

A professional and scientific organization for speech-language pathologists and audiologists concerned with communication disorders. Provides informational materials and a toll-free HELPLINE number for consumers to inquire about speech, language, or hearing problems.
C I P Rs

AMERICAN TINNITUS ASSOCIATION

DIRECTOR-Gloria E. Reich, Ph.D.
P.O. Box 5
Portland, OR 97207
Voice: (503) 248-9985
FAX: (503) 248-0024
CHAIRMAN-Phillip O. Morton
PUBLICATION-***Tinnitus Today***
Editor-Gloria E. Reich, Ph.D.
INTERNAT'L SEMINAR-July 12-15, 1995 Portland, Ore.

Provides information about tinnitus and referrals to local contacts/support groups nationwide. Also provides a bibliography service, funds scientific research related to tinnitus, and offers workshops for professionals. Works to promote public education about tinnitus.
I P Rs S

ARKANSAS REHABILITATION RESEARCH AND TRAINING CENTER FOR PERSONS WHO ARE DEAF AND HARD OF HEARING

DIRECTOR-Douglas Watson, Ph.D.
University of Arkansas
4601 W. Markham St.
Little Rock, AR 72205
Voice/TTY (501) 686-9691
FAX: (501) 686-9698

The center focuses on issues affecting the employability of deaf and hard of hearing rehabilitation clients—career assessment, career preparation, placement, career mobility, and advancement. Provides information and/or data bases related to the rehabilitation of deaf and hard of hearing people served by the federal/state Vocational Rehabilitation Program.
E P R

ASSOCIATION OF LATE-DEAFENED ADULTS

EXEC. DIRECTOR
P.O. Box 641763
Chicago, IL 60664-1763
TTY: (708) 445-0860
FAX: (708) 445-0876
PUBLICATION-***ALDA NEWS***
Publisher-Marilyn Howe
NAT'L CONVENTION-September 1994

Serves as a resource and information center for late-deafened adults and works to increase public awareness of the special needs of late-deafened adults.
C I S So

AUDITORY-VERBAL INTERNATIONAL, INC.

EXEC. DIRECTOR-Paul E. Lakeman
305 Merchants Bank Building
6 South 3rd St.
Easton, PA 18042
Voice: (215) 253-6616
TTY: (215) 253-4434
FAX: (215) 253-6709
PRESIDENT-James Watson
PUBLICATION-***The AURICLE***
Editor-Donald Goldberg, Ph.D.

AVI is dedicated to helping children who have hearing losses learn to listen and speak. Promotes the Auditory Verbal Therapy approach, which is based on the belief that the overwhelming majority of these children can hear and talk by using their residual hearing and hearing aids.
I M P Rs

BETTER HEARING INSTITUTE

EXEC. DIRECTOR-Joseph Rizzo
5021-B Backlick Road
Annandale, VA 22003
Voice/TTY: (703) 642-0580
Voice/TTY: 800-EAR-WELL
FAX: (703) 750-9302
PRESIDENT-Ross J. Roeser, Ph.D.
PUBLICATION-***Better Hearing News***
Editor-Michele D. Hartlove

BHI is a nonprofit educational organization that implements national public information programs on hearing loss and available medical, surgical, hearing aid, and rehabilitation assistance for millions of Americans with uncorrected hearing problems. BHI maintains a toll-free "Hearing HelpLine" telephone service that provides information on hearing loss, sources of assistance, lists of local hearing professionals, and other available hearing help to callers from anywhere in the United States and Canada.
E I S

BOYS TOWN NATIONAL RESEARCH HOSPITAL

DIRECTOR-Patrick E. Brookhouser, M.D.
555 N. 30th St.
Omaha, NE 68131
Voice: (402) 498-6511
TTY: (402) 498-6543
FAX: (402) 498-6638

One of the world's most comprehensive research hospitals for communicatively disabled children. Also includes such programs as: Program for the Gifted Hearing Impaired, Center for Abused Handicapped Children, Parent/Child Workshops, Center for Childhood Deafness, and the Center for Hearing Research. The National Research Register for Heredity Hearing Loss identifies families willing to participate in ongoing studies.
E I M Rs

THE CAPTION CENTER

DIRECTOR-Trisha O'Connell
125 Western Ave.
Boston, MA 02134
Voice/TTY: (617) 492-9225
FAX: (617) 562-0590

A nonprofit service of the WGBH Educational Foundation. Produces captions for every segment of the entertainment and advertising industries and offers clients an array of services including off-line captions, real-time captions, and open captions. Sells open-captioning software and QuickCaption to enable schools and agencies to caption their own programs and events. The National Center for Accessible Media (NCAM), another service of the WGBH Foundation, is a pioneer and unique facility dedicated to examining media access issues for underserved consumers (deaf, blind, and learning disabled populations). Contact Larry Goldberg, director, (617) 492-9258 (Voice/TTY).
C I Rs

CAPTIONED FILMS/VIDEOS

Modern Talking Picture Services, Inc.
PROJECT DIRECTOR-Don Zink
5000 Park St. N.
St. Petersburg, FL 33709
Voice/TTY: (800) 237-6213
FAX: (813) 545-8782
PUBLICATION-***Captioned Films/Videos Newsletter***
Editors-Don Zink, Pat Conklin
NAT'L CONVENTION-April 22-24, 1994, Washington, D.C.

Free loans of educational and entertainment captioned films and videos for deaf and hard of hearing people.
I

CENTER FOR BICULTURAL STUDIES, INC.

PRESIDENT-MJ Bienvenu
5506 Kenilworth Ave., Suite 102

Riverdale, MD 20737
Voice: (301) 277-3945
TTY: (301) 277-3944
FAX: (301) 699-5226
PUBLICATION-***TBC News***

Promotes public education on interaction of deaf and hearing cultures and fosters public acceptance, under-standing, and use of American Sign Language and other natural signed languages. Disseminates information, sponsors forums, public discussions, and video projects. Sister organization of The Bicultural Center.

C E I Rs

COCHLEAR IMPLANT CLUB INTERNATIONAL

PRESIDENT-Camille Jones
P.O. Box 464
Buffalo, NY 14223
Voice/TTY: (716) 838-4662
PUBLICATION-***CONTACT***
Editor-Larry Orloff
NAT'L CONVENTION-May 1995, Irving, Texas

Provides information and support to cochlear implant users and their families, professionals, and the general public.

I C M S

CONFERENCE OF EDUCATIONAL ADMINISTRATORS SERVING THE DEAF

PRESIDENT-William P. Johnson, Ph.D.
1600 S. Highway 275
Council Bluffs, IA 51503
Voice/TTY: (712) 366-0571
FAX: (712) 366-3218
PUBLICATIONS-***American Annals of the Deaf***
Gallaudet University, KDES PAS-6, 800 Florida Ave. NE, Washington, DC 20002-3695, Voice/TTY: (202) 651-5342
NAT'L CONVENTION-April 23-27, 1994, Vancouver, Wash.

Focuses on improvements in the education of deaf and hard of hearing people through research, personnel development, advocacy, and training.

C E P S

CONVENTION OF AMERICAN INSTRUCTORS OF THE DEAF

PRESIDENT-Michael Finneran
Office of Membership/Marketing
P.O. Box 377
Bedford, TX 76095
Voice: (817) 354-8414
TTY: (510) 794-3795
FAX: (510) 794-2409
PUBLICATIONS-***American Annals of the Deaf, News 'n Notes***
NAT'L CONVENTION-June 24-28, 1995, Minneapolis/St. Paul, Minn.

An organization that promotes professional develop-ment, communication, and information among educators of deaf individuals and other interested people.

P

DEAF ARTISTS OF AMERICA, INC.

EXEC. DIRECTOR-Tom Willard
87 N. Clinton Ave., Suite 408
Rochester, NY 14604
TTY: (716) 325-2400
FAX: (716) 325-2413
PUBLICATIONS-***Deaf Artists of America Newsletter, DAA Artists Directory***
Editor-Tom Willard

Organized to bring support and recognition to deaf and hard of hearing artists. Goals are to publish information about deaf artists, provide cultural and educational opportunities, exhibit and market deaf artists' work, and collect and disseminate information about deaf artists. Also organizes one traveling art exhibit per year.

I P S

DEAFNESS AND COMMUNICATIVE DISORDERS BRANCH

BRANCH CHIEF-Victor Galloway, Ed.D.
Rehabilitation Services Administration
Office of Special Education and Rehabilitative Services
Department of Education
330 C St. SW, Room 3228
Washington, DC 20202-2736
Voice: (202) 205-9152
TTY: (202) 205-8352
FAX: (202) 205-9772

Promotes improved and expanded rehabilitation services for deaf and hard of hearing people and individuals with speech or language impairments. Provides technical assistance to RSA staff, state rehabilitation agencies, other public and private agencies, and individuals. Also provides funding for interpreter training and demonstration rehabilitation programs such as programs for low functioning adults who are deaf.

I F

DEAFNESS RESEARCH FOUNDATION

9 E. 38th St.
New York, NY 10016
Voice/TTY: (212) 684-6556
Voice/TTY: (800) 535-DEAF
FAX: (212) 779-2125
PRESIDENT-Charles D. Kimpel
PUBLICATION-***The Receiver***

The nation's largest voluntary health organization, providing grants for fellowships, symposia, and research into causes, treatment, and prevention of all ear disorders. The DRF also provides information and referral services.

F I M Rs

DEAFPRIDE, INC.

EXEC. DIRECTOR-Ann Champ-Wilson
1350 Potomac Ave. SE
Washington, DC 20003
Voice/TTY: (202) 675-6700
FAX: (202) 547-0547
PRESIDENT-Willie Logan
PUBLICATION-***The Deafpride Advocate***

Works for the human and civil rights of deaf people and their families. The organization's empowerment and advocacy program brings together a diversity of people to work against internalized and systemic oppression for individual and institutional change.

I C E

THE EAR FOUNDATION

PRESIDENT-Michael E. Glasscock, III, M.D.
2000 Church St.
Box 111
Nashville, TN 37236
Voice/TTY: (615) 329-7809
Voice/TTY: (800) 545-HEAR
FAX: (615) 329-7935
PUBLICATIONS-***OTOSCOPE, STEADY***
Editor-Kim Young

A national, not-for-profit organization committed to integrating the hearing and balance impaired person into the mainstream of society through public awareness and medical education. Also administers The Meniere's Network, a national network of patient support groups that provides people with the opportunity to share experiences and coping strategies.

I M P S

EPISCOPAL CONFERENCE OF THE DEAF

P.O. Box 27459
Philadelphia, PA 19150
Voice: (215) 247-1059
TTY: (215 247-6454
PRESIDENT-Rev. Roger Pickering
PUBLICATION-***The Deaf Episcopalian***
Editor-Rev. Virginia Nagel
NAT'L CONVENTION-1995, Boston, Mass.

Promotes ministry for deaf people throughout the Episcopal Church. Affiliated with approximately 50 congregations in the United States.

I R

GALLAUDET UNIVERSITY

PRESIDENT-I. King Jordan, Ph.D.
800 Florida Ave. NE
Washington, DC 20002-3695
Voice/TTY: (202) 651-5000
PUBLICATION-***Gallaudet Today***
Editor-Vickie Walter

A comprehensive multipurpose educational institution serving deaf and hard of hearing individuals through education, research, and public service. Disseminates information through such units as the Gallaudet Bookstore, Gallaudet University Press, Gallaudet Research Institute, Pre-College Outreach, College for Continuing Education, Gallaudet Media Distribution Center, and the National Information Center on Deafness.

E I C Rs

Each organization was asked to identify up to four descriptors that best describe the organization's focus. The codes are:

C Consumer and/or Advocacy • E Educational • F Funding Source • I Information and/or Referral • M Medical • P Professional • Rc Recreation • R Religious • Re Research • S Self-help/Support • So Social

GALLAUDET UNIVERSITY ALUMNI ASSOCIATION

EXEC. SECRETARY-Mary Anne Pugin, '71
Alumni House
Gallaudet University
800 Florida Ave. NE
Washington, DC 20002-3695
Voice: (202) 651-5060
TTY: (202) 651-5061
FAX: (202) 651-5062
PRESIDENT-Donna F. Drake, '69
PUBLICATION-***Gallaudet Alumni Newsletter***
Editor-Mike Kaika, '72
TRIENNIAL REUNION-Summer 1995, Gallaudet University

Represents more than 12,000 alumni of Gallaudet University across the United States and around the world. The GUAA, which is governed by a nationally elected board of directors, provides a variety of services that support and benefit the University, the alumni, and the general deaf community.

C F So

HEARING EDUCATION AND AWARENESS FOR ROCKERS-H.E.A.R.

EXEC. DIRECTOR-Kathy Peck-Denny
P.O. Box 460847
San Francisco, CA 94146
Voice: (415) 773-9590 hotline
Voice: (415) 441-9081
TTY: (415) 476-7600
FAX: (415) 476-7613

H.E.A.R. is dedicated to educating the public about the real dangers of hearing loss resulting from repeated exposure to excessive noise levels. Offers information about hearing protection, testing, and other information about hearing loss and tinnitus. Operates a 24-hour hotline information, referral, and support network service and conducts a free hearing screening program in the San Francisco Bay area. Also launches public hearing awareness campaigns, programs for schools and seminars, and distributes earplugs to club and concert-goers. Initiated H.E.A.R. affiliates in other cites worldwide.

C I S

HEAR NOW

EXEC. DIRECTOR-Linda Herry, M.A.-CCCA
9745 E. Hampden Ave., #300
Denver, CO 80231
Voice/TTY: (303) 695-4327
Voice/TTY: (800) 648-HEAR
PRESIDENT-M. Bernice Dinner, Ph.D.
PUBLICATION-***HEAR NOW***
Editor-M. Bernice Dinner, Ph.D.

Committed to making technology accessible to deaf and hard of hearing individuals throughout the United States. HEAR NOW raises funds to provide hearing aids, cochlear implants, and related services to children and adults who have hearing losses but do not have the financial resources to purchase their own device(s).

C F I P

HEATH RESOURCE CENTER

(The national clearinghouse on postsecondary education for individuals with disabilities, a program of the American Council on Education.)
DIRECTOR-Rhona C. Hartman
1 Dupont Circle
Washington, DC 20036
Voice/TTY: (202) 939-9320
Voice/TTY: (800) 544-3284
FAX: (202) 833-4760 (American Council on Education)
PUBLICATION-***Information from HEATH***
Editor-Rhona C. Hartman

HEATH disseminates information nationally about disability issues in postsecondary education. It offers free publications and a toll-free telephone service of use to administrators, service providers, teachers, instructors, rehabilitation counselors, health professionals, and to individuals with disabilities and their families.

I C P S

HELEN KELLER NATIONAL CENTER FOR DEAF-BLIND YOUTHS AND ADULTS

DIRECTOR-Joseph J. McNulty
111 Middle Neck Road
Sands Point, NY 11050
Voice: (516) 944-8900
TTY: (516) 944-8637
FAX: (516) 944-7302
PUBLICATIONS-***The Nat-Cent News, National Parent Newsletter, TAC Newsletter***
Editors-Dr. Robert J. Smithdas ***(News)***, Nancy O'Donnell ***(Parent)***, Terry Carr ***(TAC)***

The national center and its 10 regional offices provide diagnosis evaluations, comprehensive vocational and personal adjustment training, and job preparation and placement for people who are deaf-blind from every state and territory. Field services include information and referral and advocacy and technical assistance to professionals, consumers, and families. Also provides a National Parent Network and Services for Older Adults Who are Deaf-Blind.

C E I P

HOUSE EAR INSTITUTE

2100 W. Third St., 5th Floor
Los Angeles, CA 90057
Voice: (213) 483-4431
TTY: (213) 484-2642
FAX: (213) 483-8789
PRESIDENT-John W. House, M.D.
PUBLICATION-***Review***
Editor-Nancy Miron

National nonprofit otologic research and educational institute that provides information on hearing and balance disorders. The Children's Auditory Research and Evaluation (C.A.R.E.) Center does evaluation and therapy. Also offers professional and general public educational programs that include Safety Patrol, Bridging the Gap, Family Camp, and the Young Adult Work Program for deaf children and families.

E I M R S

INTERNATIONAL HEARING SOCIETY

EXEC. DIRECTOR-Robin L. Holm
20361 Middlebelt Road
Livonia, MI 48152
Voice: (313) 478-2610
Voice: (800) 521-5247 Hearing Aid Helpline
FAX: (313) 478-4520
PRESIDENT-Herbert D. Gortin
PUBLICATION-***Audecibel***
Editor-Lois M. White
NAT'L CONVENTION-Aug. 31-Sept. 4, 1994, Nashville, Tenn.

Professional association of specialists who test hearing and select, fit, and dispense hearing instruments. The society conducts programs of competence qualifications, education, and training, and promotes specialty-level accreditation. The Hearing Aid Helpline provides consumer information and referral.

I C P

INTERNATIONAL LUTHERAN DEAF ASSOCIATION

PRESIDENT-Ronald Madding
1333 S. Kirkwood Road
St. Louis, MO 63122
Voice/TTY: (314) 965-9917, ext. 1315
PUBLICATION-***The Deaf Lutheran***
Editor-Lester Ahls
NAT'L CONVENTION-June 27-July 2, 1995, Chicago, Ill.

Promotes ministry for deaf people throughout the Lutheran Church-Missouri Synod.

I R

JOHN TRACY CLINIC

EXEC. DIRECTOR-James H. Garrity, Ed.D.
806 W. Adams Blvd.
Los Angeles, CA 90007
Voice: (213) 748-5481
TTY: (213) 747-2924
Voice/TTY: (800) 522-4582
FAX: (213) 749-1651

JTC is an educational facility for preschool-age children who have hearing losses and their families. In addition to on-site services, worldwide correspondence courses in English and Spanish are offered to parents whose children are of preschool age and are hard of hearing, deaf, or deaf-blind. All services of JTC are free of charge to the families.

E I S

JUNIOR NATIONAL ASSOCIATION OF THE DEAF AND YOUTH LEADERSHIP CAMP

YOUTH PROGRAM COORDINATOR-Lisa Herberger
814 Thayer Ave.
Silver Spring, MD 20910-4500
Call NAD (see next entry)
PUBLICATION-***Junior NAD News***

Develops and promotes citizenship, scholarship, and leadership skills in deaf and hard of hearing high school students through chapter projects, national conventions, contests, and other activities. The NAD also sponsors a month-long Youth Leadership Camp program each summer in Oregon.

I Rc So

NATIONAL ASSOCIATION OF THE DEAF

EXEC. DIRECTOR-Nancy J. Bloch
814 Thayer Ave.
Silver Spring, MD 20910
Voice: (301) 587-1788
TTY: (301) 587-1789

BEST COPY AVAILABLE

FAX: (301) 587-1791
PRESIDENT-Benjamin Soukup
PUBLICATIONS-***The NAD Broadcaster, The Deaf American***
Editors-Nancy J. Bloch, Nancy Creighton
NAT'L CONVENTION-July 4-10, 1994, Knoxville, Tenn.

The oldest and one of the largest consumer organizations advocating for equal access by people who are deaf or hard of hearing in the areas of employment, education, telecommunications, and rehabilitation. Also, maintains the NAD Publications Department at (301) 587-6282 (Voice/TTY), deaf awareness programs, a legal defense fund, a public information center, youth programs, and certification programs for interpreters and for sign language instructors.
C I S

NATIONAL BLACK DEAF ADVOCATES

PRESIDENT-Pam Lloyd
639 Garden Walk Blvd., #1101
College Park, GA 30349
TTY: (404) 997-1489 (home)
TTY: 9404) 669-2908 (work)
FAX: 9404) 669-2922

Promotes leadership, deaf awareness, and active participation in the political, educational, and economic processes that affect the lives of black deaf citizens. Currently has 15 chapters.
C I S

NATIONAL CAPTIONING INSTITUTE

EXEC. DIRECTOR OF PUBLIC RELATIONS-Don Thieme
5203 Leesburg Pike
Falls Church, VA 22041
Voice/TTY: (703) 998-2400
Voice: (800) 533-9673
TTY: (800) 321-8337
FAX: (703) 998-2483
PRESIDENT-Philip W. Bravin
PUBLICATION-***Caption***

Provides closed-captioning service for television networks, program producers, cable-casters, producers of home entertainment videocassettes, advertisers, and other organizations in the federal and private sectors. Additionally, distributes TeleCaption decoders around the country.
I

NATIONAL CATHOLIC OFFICE OF THE DEAF

EXEC. DIRECTOR-Nora Letourneau, Ph.D.
814 Thayer Ave.
Silver Spring, MD 20910
Voice/TTY: (301) 587-7992
TTY: (301) 585-5084
PUBLICATIONS-***Vision, RADAR***
Editor-Nora Letourneau, Ph.D.

Assists in the coordination of the efforts of people and organizations involved in the church's ministry with deaf and hard of hearing people; serves as a resource center for information concerning spiritual needs and religious educational materials; and assists bishops and pastors with their pastoral responsibilities to people who are deaf or hard of hearing.
I P R

NATIONAL CENTER FOR LAW AND DEAFNESS

LEGAL DIRECTOR-Sy DuBow
Gallaudet University
800 Florida Ave. NE
Washington, DC 20002-3695
Voice/TTY: (202) 651-5373
FAX: (202) 651-5381

Develops and provides a variety of legal services and programs to the deaf community, including representation, counseling, information, and education.
I

NATIONAL CONGRESS OF JEWISH DEAF

EXEC. DIRECTOR -Judy Slomovic Gunter
33 South Landing Road
Rochester, NY 14610
Voice/TTY: (716) 387-0762
PRESIDENT-Barbara Boyd, Ph.D.
PUBLICATION-***N.C.J.D. QUARTERLY***
NAT'L CONVENTION-Aug. 7-14, 1994, Toronto, Ontario, Canada

Advocates for religious, educational, and cultural ideals and fellowship for Jewish deaf people. Conducts workshops for rabbis, parents of deaf children, and interpreters. Works with 20 affiliates and maintains a Hall of Fame.
C F I R

NATIONAL CUED SPEECH ASSOCIATION

EXEC. DIRECTOR-Mary Elsie Daisey
1615-B Oberlin Road
P.O. Box 31345
Raleigh, NC 27622
Voice/TTY: (919) 828-1218
PRESIDENT-Barbara B. Caldwell
PUBLICATIONS-***On Cue, Cued Speech Journal, Newsflash***
Editors-Barbara Caldwell ***(On Cue)***, Carol J. Boggs, Ph.D. ***(Journal)***, Mary Ann Flanagan ***(Newsflash)***

Membership organization that provides advocacy and support regarding use of Cued Speech. Information and services are provided for deaf and hard of hearing people of all ages, their families and friends, and professionals who work with them.
I C S P

NATIONAL FRATERNAL SOCIETY OF THE DEAF

GRAND PRESIDENT-Wayne D. Shook
1300 W. Northwest Highway
Mt. Prospect, IL 60056
Voice: (708) 392-9282
TTY: (708) 392-1409
Voice/TTY: (800) 676-NFSD
FAX: (708) 392-9298
PUBLICATION-***The Frat***
Editor-Wayne D. Shook
NAT'L CONVENTION-July 1995, Salt Lake City, Utah

Works in the area of life insurance and advocacy for deaf people. Has 88 chapters across the country.
I C S

NATIONAL INFORMATION CENTER FOR CHILDREN AND YOUTH WITH DISABILITIES

P.O. Box 1492
Washington, DC 20013
Voice/TTY: (800) 695-0285
Voice/TTY: (202) 416-0300
FAX: (202) 416-0312
PUBLICATIONS-***NICHCY News Digest, Transition Summary, Parent's Guide***

NICHCY provides free information to assist parents, educators, care-givers, advocates, and others in helping children and youth with disabilities become participating members of the community.
C I

NATIONAL INFORMATION CENTER ON DEAFNESS

DIRECTOR-Loraine DiPietro
Gallaudet University
800 Florida Ave. NE
Washington, DC 20002-3695
Voice: (202) 651-5051
TTY: (202) 651-5052
FAX: (202) 651-5054

Serves as a centralized source of up-to-date, objective information on topics dealing with deafness and hearing loss. NICD collects, develops, and disseminates information about all aspects of hearing loss and services offered to deaf and hard of hearing people across the nation. Also provides information about Gallaudet University.
I

NATIONAL INFORMATION CLEARING-HOUSE ON CHILDREN WHO ARE DEAF-BLIND (DB-LINK)

DIRECTOR-John Reiman, Ph.D.
Teaching Research
345 N. Monmouth Avenue
Monmouth, OR 97361
Voice: (800) 438-9376
TTY: (800) 854-7013

Each organization was asked to identify up to four descriptors that best describe the organization's focus. The codes are:
C Consumer and/or Advocacy • E Educational • F Funding Source • I Information and/or Referral • M Medical • P Professional • Rc Recreation • R Religious • Re Research • S Self-help/Support • So Social

PUBLICATION-***Deaf-Blind Perspectives***
Editor-Bruce Bull

Collects, organizes, and disseminates information related to children and youth (ages 0-21) who are deaf-blind and connects consumers of deaf-blind information to sources of information about deaf blindness, assistive technology, and deaf-blind people. DB-LINK is a collaborative effort involving the American Association of the Deaf-Blind, American Foundation for the Blind, Helen Keller National Center, Perkins School for the Blind, and Teaching Research.

I C P Rs

NATIONAL INSTITUTE ON DEAFNESS AND OTHER COMMUNICATION DISORDERS CLEARINGHOUSE

Project Director-Patricia Blessing
P.O. Box 37777
Washington, DC 20013-7777
Voice: (800) 241-1044
TTY: (800) 241-1055
FAX: (301) 565-5112
Publication-***INSIDE***

The NIDCD Clearinghouse is a national resource center for information about hearing, balance, small, taste, voice, speech, and language. The clearinghouse serves health professionals, patients, industry, and the public.

I F P Rs

THE NATIONAL REHABILITATION INFORMATION CENTER

DIRECTOR-Mark Odum
8455 Colesville Road, Suite 935
Silver Spring, MD 20910
Voice/TTY: (301) 588-9284
Voice/TTY: (800) 346-2742
FAX: (301) 587-1967
PUBLICATION-***NARIC Quarterly***
Editor-Carol Boyer

Provides information and referral services on disability and rehabilitation, including quick information and referral, data base searches of the bibliographic data base REHABDATA, and document delivery.

I

NATIONAL TECHNICAL INSTITUTE FOR THE DEAF

DIRECTOR-William E. Castle, Ph.D.
Rochester Institute of Technology
Marketing Communications
52 Lomb Memorial Drive, LBJ Building
Rochester, NY 14623-5604
Voice: (716) 475-6400
TTY: (716) 475-2181
FAX: (716) 475-6500
PUBLICATION-***NTID Focus***
Editor-Lynne Bohlman

Provides technological postsecondary education to deaf and hard of hearing students. Disseminates informational materials and instructional videotapes on issues related to deaf people and deaf culture.

E I

THE NATIONAL THEATRE OF THE DEAF

ARTISTIC DIRECTORS-Camille L. Jeter, Will Rhys
5 West Main St.
P.O. Box 659
Chester, CT 06412
Voice: (203) 526-4971
TTY: (203) 526-4974
FAX: (203) 526-9732
OUTREACH: (203) 526-4931
DIRECTOR (Professional School)-Camille L. Jeter
DIRECTOR OUTREACH-Nat Wilson

Concentrates on artistic and theatrical professional development of deaf actors. Tours the United States and aboard. Also presents Little Theatre of the Deaf productions in schools, theaters, museums, and libraries. Sponsors a professional school, and Deaf Theatre Conference for deaf individuals interested in the art of theater.

C E I

QUOTA INTERNATIONAL, INC.

EXEC. DIRECTOR-Kathleen W. Thomas, CAE
1420 21st St. NW
Washington, DC 20036
Voice/TTY: (202) 331-9694
FAX: (202) 331-4395
PRESIDENT-Ilse Mitchell
PUBLICATION-***The Quotarian***
NAT'L CONVENTION-July 23-24, 1994, Orlando, Fla.

Shatter Silence, Shatter Noise, and the annual Deaf Woman of the Year Contest are programs Quota Clubs conduct through the Quota International Foundation to inform their community about the needs and abilities of hearing and speech impaired people.

I

RAINBOW ALLIANCE OF THE DEAF

PRESIDENT-Micheal Turgeon
c/o Astro Rainbow Alliance of the Deaf
Attn: Scot A. Pott, RAD Secretary
P.O. Box 66136
Houston, TX 77266-6136
TTY: (713) 621-1103 evenings/weekends
FAX: (713) 528-4923 weekdays
PUBLICATION-***Tattler***
NAT'L CONVENTION-July 5-9, 1995, Montreal, Canada

RAD is a national organization serving the deaf gay and lesbian community. Represents approximately 24 chapters throughout the United States, Canada, and Europe.

I S So

REGISTRY OF INTERPRETERS FOR THE DEAF, INC.

PRESIDENT-Janet L. Bailey, CSC, SC:PA
8719 Colesville Road, Suite 310
Silver Spring, MD 20910-3919
Voice/TTY: (301) 608-0050
FAX: (301) 608-0508
PUBLICATION-***Views***
NAT'L CONVENTION-August 1995, New Orleans, La.

A professional organization that certifies interpreters, provides information on interpreting to the general public, and publishes a national directory of certified interpreters.

I P

THE SEE CENTER FOR THE ADVANCEMENT OF DEAF CHILDREN

DIRECTOR-Gerilee Gustason, Ph.D.
Main Office: P.O. Box 1181
Los Alamitos, CA 90720
Voice/TTY: (310) 430-1467
Branch Office: San Jose State University
Division of Special Education
Washington Square
San Jose, CA 95192
Voice: (408) 924-3784
TTY: (408) 924-3782
FAX: (408) 924-3713
PRESIDENT-David Zawolkow
PUBLICATION-***SEE: What's Happening***

Information and referral for parents and educators on deafness-related topics and Signing Exact English (SEE). Provides evaluation of sign skills, workshops, and consulting services related to communication in general and SEE in particular.

E I S

SELF HELP FOR HARD OF HEARING PEOPLE, INC.

EXEC. DIRECTOR-Donna L. Sorkin
7910 Woodmont Ave., Suite 1200
Bethesda, MD 20814
Voice: (301) 657-2248
TTY: (301) 657-2249
FAX: (301) 913-9413
PRESIDENT-Daniel R. Simmons
PUBLICATION-***SHHH Journal***
Editor-Barbara Harris
NAT'L CONVENTION-July 17-21, 1994, Baltimore, Md.

Promotes awareness and information about hearing loss, communication, assistive devices, and alternative communication skills through publications, exhibits, and presentations.

I C S

TELECOMMUNICATIONS FOR THE DEAF, INC.

EXEC. DIRECTOR-Alfred Sonnenstrahl
8719 Colesville Road, Suite 300
Silver Spring, MD 20910-3919
Voice: (301) 589-3786
TTY: (301) 589-3006
FAX: (301) 589-3797
PRESIDENT-Frank Turk
PUBLICATIONS-***GA-SK*** (newsletter), ***Directory for Text Telephone Users*** (annual directory)
Editor-Alfred Sonnenstrahl
NAT'L CONVENTION-June 26-July 1, 1995, Boston, Mass.

A TTY/PC consumer-oriented organization that sells caption decoders and a directory for deaf people. Supports legislation relating to and advocates the use of TTYs, ASCII code,Emergency Access (911), telecap-tioning, and visual alerting systems in the public, private, and government sectors.

C I

TELE-CONSUMER HOTLINE

EXEC. DIRECTOR-Barbara Hutchison
1910 K St. NW, Suite 610
Washington, DC 20006
Voice/TTY: (202) 223-4371
Voice/TTY: (800) 332-1124
FAX: (202) 466-6020

Nonprofit, independent, and impartial telephone consumer information service. Provides free telephone assistance and publications on special telephone equipment, TTY directories, troubleshooting, selecting a phone, telephone fraud, money-saving tips, relay services, and more.
C E I Rs

TRIPOD
EXEC. DIRECTOR-Carl J. Kirchner
2901 N. Keystone St.
Burbank, CA 91504
Voice/TTY: (818) 972-2080
Voice/TTY: (800) 352-8888
Voice/TTY: (800) 2-TRIPOD (Calif. only)
FAX: (818) 972-2090
PRESIDENT-Megan Williams
PUBLICATION-***SENSE***
Editor-Kris Stout

Provides a national toll-free hotline for parents and other individuals wanting information about rearing and educating deaf and hard of hearing children. TRIPOD operates a model parent/infant/toddler program, Montessori preschool/kindergarten, and elementary and middle school integrated programs for hearing, deaf, and hard of hearing children within the Burbank Unified School District.
C E I Rs

VESTIBULAR DISORDERS ASSOCIATION
EXEC. DIRECTOR-Jerry Underwood
P.O. Box 4467
Portland, OR 97208-4467
Voice: (503) 229-7705
Voice: (800) 837-8428
FAX: (503) 229-8064
PRESIDENT-Charlotte Shupert
PUBLICATION-***On the Level***
Editor-Jerry Underwood

Provides information and support for people with inner-ear vestibular disorders and develops awareness of the issues surrounding these disorders.
I M S

WORLD RECREATION ASSOCIATION OF THE DEAF, INC./USA
PRESIDENT-Ted Lord
P.O. Box 3211
Quartz Hill, CA 93586
TTY: (716) 586-4208
FAX: (716) 475-7101
PUBLICATION-***WRAD NEWS***
Editor-Lisa Moore
NAT'L CONVENTION-October 1994, Rochester, N.Y.

Established to foster the development of innovation in recreational and cultural activities for the deaf and hard of hearing community.
I P Rc So

STATE COMMISSIONS/OFFICES ON DEAFNESS

State commissions or state offices are mandated to serve deaf and hard of hearing people. While the scope of services differs from state to state, these programs provide a variety of valuable services. Among the functions are advocacy, information gathering and dissemination, referral to appropriate agencies, interpreting services, statewide planning, and job placement and development.

NOTE: For those states not having commissions or state offices we have listed the state coordinators of rehabilitation services for deaf people.

ALABAMA
Division of Rehabilitation Services
State Coordinator: Earl Lindsay
(205) 281-8780 (V/TTY)

ALASKA
Division of Vocational Rehabilitation
State Coordinator: Duane Mays
(907) 561-4466 (V/TTY)

ARIZONA
Arizona Council for the Hearing Impaired
Exec. Director: Stuart Brackney
(602) 542-3323 (V/TTY)
(800) 352-8161 (V/TTY) in Arizona

ARKANSAS
Office of the Deaf and Hearing Impaired
Asst. Deputy Director: Gloria Wright
(501) 682-6667 (V/TTY)
(501) 682-6669 (TTY)

CALIFORNIA
State Office of Deaf Access
Chief: Fred Lewis
(916) 657-1770 (V)
(916) 657-3480 (TTY)

COLORADO
Colorado Vocational Rehabilitation Services
Supervisor: Larry Gauthier
(303) 894-2650 (V/TTY)

CONNECTICUT
Connecticut Commission on the Deaf and Hearing Impaired
Acting Exec. Director: Richard Schreiber
(203) 566-7414 (V/TTY)

DELAWARE
Delaware Office for the Deaf and Hard of Hearing
State Coordinator: Loretta Sarro
(302) 577-2850 (V/TTY)

DISTRICT OF COLUMBIA
Rehabilitation Services Administration
State Coordinator: Marlene Jones-Kinney
(202) 727-0981 (V/TTY)

FLORIDA
Florida Council for the Hearing Impaired
Exec. Director: Peggy Schmidt
(800) 451-4327 (V/TTY) in Florida
(904) 488-5087 (V/TTY)

GEORGIA
Division of Rehabilitation Services
Program Coordinator: Dennis Fennell
(404) 657-3073 (V/TTY)

HAWAII
Hawaii State Coordinating Council on Deafness
Program Coordinator: Marianne Chung
(808) 586-8131 (V/TTY)
(808) 586-8130 (TTY)

IDAHO
Idaho Council for the Deaf and Hard of Hearing
Exec. Director: Pennie Cooper
(208) 334-0879 (V/TTY)

ILLINOIS
Division of Servces for Persons who are Deaf or Hard of Hearing
State Coordinator: Ellen Roth
(312) 814-2939 (V)
(312) 814-3040 (TTY)

INDIANA
Deaf and Hard of Hearing Services
Deputy Director: Jerome W. Freeman
(317) 232-1143 (V/TTY)
(800) 962-8408 (V/TTY) in Indiana

IOWA
Deaf Services Commission of Iowa
Administrator: Diana Leonard
(515) 281-3164 (V/TTY)

KANSAS
Kansas Commission for the Deaf and Hard of Hearing
Exec. Director: Brenda J. Eddy
(913) 296-2874 (V/TTY)
(800) 432-0698 (V/TTY) in Kansas

KENTUCKY
Kentucky Commission on the Deaf and Hard of Hearing
Exec. Director: Bobbie Beth Scoggins
(502) 564-2604 (V/TTY)
(800) 372-2907 (V/TTY) in Kentucky

LOUISIANA
Louisiana Commission for the Deaf
Exec. Director: Robert Bevill
(504) 925-4178 (V/TTY)
(800) 256-1523 (V/TTY) in Louisiana

MAINE
Bureau of Rehabilitation Services
Division of Deafness
State Coordinator: Norm Perrin
(207) 624-5318 (V)
(207) 624-5322 (TTY)

MARYLAND
Maryland Division of Rehabilitation Services
State Coordinator: Bona Achinanya
(410) 554-3278 (V)
(410) 554-3277 (TTY)

MASSACHUSETTS
Massachusetts Commission for the Deaf and Hard of Hearing
Commissioner: Barbara Jean Wood
(617) 727-5106 (V/TTY)
(800) 882-1155 (V/TTY) in Mass.

MICHIGAN
Division of Deafness
Michigan Department of Labor
Director: Christopher Hunter
(517) 373-0378 (V/TTY)

MINNESOTA
Minnesota Commission Serving Deaf and Hard of Hearing People
Exec. Director: Curt Micka
(612) 297-7305 (V/TTY)

MISSISSIPPI
Vocational Rehabilitation Services
State Coordinator: Gary Neely
(601) 853-5310 (V/TTY)

MISSOURI
Missouri Commission for the Deaf
Exec. Director: Gerald Covell
(314) 592-4030 (V/TTY)

MONTANA
Rehabilitative/Visual Services Division
Bureau Chief: Faith Timm
(406) 727-7740 (V/TTY)

NEBRASKA
Nebraska Commission for the Hearing Impaired
Exec. Director: Tanya Wendel
(402) 471-3593 (V/TTY)

NEVADA
Rehabilitation Division
Deaf Coordinator: Elaine Smith
(702) 687-4452 (V)
(702) 687-3388 (TTY)

NEW HAMPSHIRE
Program for the Deaf and Hard of Hearing
State Coordinator: Vacant
(603) 271-3471 (V/TTY)

NEW JERSEY
Division of the Deaf and Hard of Hearing
Department of Human Services
Director: Richard Herring
(609) 984-7281 (V/TTY)
(800) 792-8839 (V/TTY) in New Jersey

NEW MEXICO
New Mexico Commission for the Deaf and Hard of Hearing
Director: Robert Geesey
(505) 827-7584 (V)
(505) 827-7588 (V/TTY)
(800) 489-8536 (V/TTY)

NEW YORK
Office of Vocational and Educational Services for Individuals with Disabilities
Deaf Services Coordinator: Mark Myers
(518) 486-3773 (V/TTY)

NORTH CAROLINA
Department of Human Resources
Division of Services for the Deaf/Hard of Hearing
Director: Frank Turk
(919) 733-5199 (V)
(919) 733-5930 (TTY)

NORTH DAKOTA
Office of Vocational Rehabilitation
State Coordinator: George Saiki
(701) 224-3999 (V)
(701) 224-3975 (TTY)

OHIO
Rehabilitation Services Commission
State Coordinator: Karlton (Skip) Bergquist
(614) 438-1325 (V/TTY)
(800) 282-4536 (V/TTY) in Ohio

OKLAHOMA
Services to the Deaf and Hard of Hearing
State Coordinator: Ed Minnis
(405) 424-4311 Ext. 2920 (V)
(405) 424-2794 (TTY)

OREGON
Oregon Disabilities Commission
State Coordinator: Majorie McGee
(503) 378-3142 (V/TTY)
(800) 358-3117 (V/TTY) in Oregon

PENNSYLVANIA
Office for the Deaf and Hearing Impaired
Director: Mr. Sandy Duncan
(717) 783-4912 (V/TTY)
(800) 233-3008 (V/TTY) in Penn.

PUERTO RICO
Vocational Rehabilitation
Director of Division of Deaf Clients:
Aida Luz Matos
(809) 782-0011 (V/TTY)

RHODE ISLAND
Commission on the Deaf and Hard of Hearing
Coordinator: Raymond Smith, Jr.
(401) 277-1204 (V)
(401) 277-1205 (TTY)

SOUTH CAROLINA
Vocational Rehabilitation Department
State Coordinator: Larry M. Harrelson
(803) 822-5313 (V/TTY)

SOUTH DAKOTA
Communication Services for the Deaf
Director: Benjamin Soukup
(605) 339-6718 (V/TTY)

TENNESSEE
Tennessee Council for the Hearing Impaired
Exec. Director: Sherri Rademacher
(615) 741-5644 (V/TTY)

TEXAS
Texas Commission for the Deaf and Hearing Impaired
Exec. Director: David Myers
(512) 451-8494 (V/TTY)

UTAH
Utah State Office of Rehabilitation
Administrator: Gene Stewart
(801) 262-3931 (V/TTY)

VERMONT
Division of Vocational Rehabilitation
State Coordinator: Rene Pellerin
(802) 241-2186 (V/TTY)

VIRGINIA
Virginia Department for the Deaf and Hard of Hearing
Director: Vacant
(804) 225-2570 (V/TTY)
(800) 552-7917 (V/TTY) in Virginia

VIRGIN ISLANDS
Disabilities and Rehabilitation Services
Administrator: Sedonie Halbert
(809) 773-2323 (V/TTY)

WASHINGTON
Office of Deaf and Hard of Hearing Services
Division of Social and Health Services
Director: Leon Curtis
(206) 753-0703 (V/TTY)
(202) 753-0699 (TTY)

WEST VIRGINIA
West Virginia Commission for the Hearing Impaired
Exec. Director: Hubert Anderson, Jr.
(304) 558-2175 (V/TTY)

WISCONSIN
Office for the Hearing Impaired
Department of Health and Social Services
Director: Arvilla Rank
(608) 266-8081 (V)
(608) 266-8082 (TTY)

WYOMING
Division of Vocational Rehabilitation
State Coordinator: Carl Shapard
(307) 856-2393 (V/TTY)

Please let us know of other organizations that should be added to this directory. Send all changes or corrections to:

National Information Center on Deafness
Directory Update
Gallaudet University
800 Florida Ave. NE
Washington, DC 20002-3695

Gallaudet University is an equal opportunity employer/educational institution and does not discriminate on the basis of race, color, sex, national origin, religion, age, hearing status, disability, covered veteran status, marital status, personal appearance, sexual orientation, family responsibilities, matriculation, political affiliation, source of income, any other unlawful basis.

NATIONAL ASSOCIATION OF STATE DIRECTORS
OF SPECIAL EDUCATION, INC.
King Street Station, I
1800 Diagonal Road, Suite 320
Alexandria, VA 22314

TEL. *703.519.3800*
FAX *703.519.3808*
TDD *703.519.7008*